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THIRTY-NINTH YEAR

DEVOTED TO THE INTERESTS OF THE AMERICAN PAPER TRADE

PUBLISHED EVERY THURSDAY BY THE

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The W. B. Oglesby Paper Company

MIDDLETOWN, OHIO

Bonds, Linens, Ledgers,
Playing Card Papers
and High Grade
Rag Specialties

CONVENTION WEEK

The Paper Manufacturers and Dealers Hold Their Regular Annual Meetings in New York City

The Gatherings This Year of Both Associations Were Distinguished by the Consideration of Important Trade Questions—Full Reports of the Proceedings—The Two Banquets Very Enjoyable Affairs

UNUSUAL interest this year centered in the thirty-fourth annual meeting of the American Paper and Pulp Association, held at the Waldorf-Astoria Hotel, New York, last Wednesday and Thursday. The convention will long be remembered as the most memorable and important in the history of the organization; memorable because it brought together as large and representative an attendance as any of which the association can yet boast, and important because the subjects and problems threshed out in convention were among the weightiest that have come before any body of paper manufacturers in the United States since organization became a necessary factor of the industry.

There met to discuss the possibilities and probabilities of the trade men from North, South, East and West representative of every department of the paper making industry—assembled for a common cause in which all are vitally interested; some more directly than others, but all sufficiently so to make the discussions and resolutions of peculiar value and importance.

The feature uppermost in the minds of all American paper men is that of the pending reciprocal relations with Canada, which, if finally enacted into law, would virtually present as a gift the paper making industry of the United States to Canadian manufacturers of low priced products.

Because of a custom of permanency now prevalent in the association, the only changes in President Hasting's official family were such as affected the staff of the executive council, comprising the various divisions of the paper making industry. The wrapping paper division will during the ensuing year be represented by Henry W. Stokes, of the York Haven Paper Company; that of boards by R. C. Richardson, of the Richardson Paper Company, of Lockland, O.; that of writing by W. D. Judd, of the Carew Manufacturing Company, South Hadly Falls, Mass.; that of pulp by Mr. Rosebush, of the Combined Locks Paper Company; that of chemical pulp by Thomas Hunter, of the Battle Island Paper Company, and that of specialties by S. A. Upham, of the Brownville Paper Company, Brownville, N. Y. The bag paper division has been abolished.

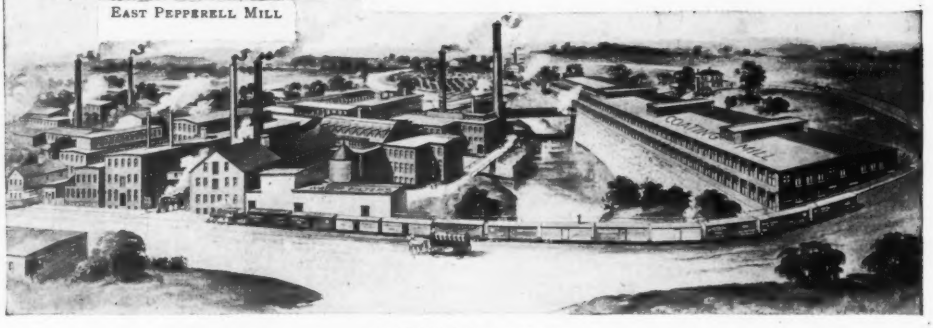
ARTHUR C. HASTINGS,
President American Paper and Pulp Association.

On Wednesday the business was confined to meetings of the various divisions, and on Thursday morning the general meeting of the association was called to order by President Hastings. It was unusually well attended and occupied the entire morning, adjournment being taken for luncheon at one o'clock. The afternoon session was begun at 2 p. m. and lasted a couple of hours. It was devoted to an instructive lecture by Dr. H. Stanley Bristol, assistant director of the Forest Products Laboratory of the United States at Wausau, Wis., on wood in the manufacture of paper. The lecture was illustrated by lantern slides. Dr. Bristol exhibited a number of samples of paper made from different wood fibre in various percentages, which indicated what could be done with raw products which hitherto have been looked upon as of more or less doubtful value.

CHAMPION-INTERNATIONAL COMPANY

LAWRENCE, MASS.

EAST PEPPERELL MILL



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MANUFACTURERS OF

High Grade Surface Coated Papers

ALSO

SODA AND SULPHITE PULP

MILLS AT LAWRENCE

AND

EAST PEPPERELL, MASS.

The exhibit proved of unusual interest to the manufacturers.

A very valuable paper on the water storage problem in New York was read by Walter McCulloh, consulting engineer of the New York State Water Commission.

The first important matter which claimed the attention of the members was the reading by President Hastings of his annual address.

President Hasting's Report.

The report of Arthur C. Hastings, president of the association, follows:

We are assembled at our thirty-fourth annual convention, and since the time the association practically elected its chief officers for life it is difficult for the president, after the continual letters he is getting out, to give you anything very new in his annual report. I often wonder if there is not too much being said by the president, but as you have him with you, and it is part of his duty to make a report, you will have to listen to it, and you will admit that he has been consistent.

The year 1910, I believe, has been a pretty fair one for the manufacturers in most lines of paper making; overproduction is just enough to make an unstaple market. The only way to stop this overbuilding, and injudicious investment of capital, is through statistics as to the market demand, and I know in several instances where we have been able to show from actual figures of demand and supply that capital has hesitated to go into a business doomed to be unsatisfactory.

THE TARIFF AND RECIPROCITY TROUBLES.

We had occasion at our annual meeting in 1909 to congratulate ourselves that we had been investigated by the so called Mann committee, and we believed that the results would show that we were not in receipt of a proper duty to cover the difference in cost of paper here and abroad.

At our annual meeting in 1910 we congratulated ourselves that the tariff and its consequent annoyances were a thing of the past, and I took occasion to say that I did not believe it would interfere with our business for some time to come, but in spite of our hopes and desires we have been investigated by a tariff board of the United States Government, with a view of deciding whether we, with a duty of about 9 per cent. on our finished product, in some grades of paper, and our wood pulp put upon the free list, under certain conditions, should not be subjected to a still further reduction, and I imagine when all the duty is taken off a bonus will be offered to the exporting country. Already, and before this tariff board is given an opportunity to report its findings, we are put upon the free list by a so called reciprocity agreement with Canada, which proposes to put paper and pulp on the free list, and in return we are to have some articles, foreign to the paper business, allowed to enter Canada free; but until such time as Canada chooses we are not allowed to ship any paper or pulp in there except at a higher rate of duty than even under the Dingley law. The injustice of this should appeal to even the Congress; we at least should have the protection of the maximum rate until our northern neighbor gives us her raw material in the shape of wood from her Crown lands, and allow us to ship into Canada our product on the same terms, and then, possibly, the minimum rate.

THE PAPER BUSINESS HARASSED.

There is no other manufacturing business, I believe, in the United States which has been so harassed and abused as has the paper manufacture in all its branches, and solely through the selfish desire of one class of publishers to buy their paper at a price which would not warrant the average paper mill staying in business; but I suppose as long as these people are our customers we must expect similar treatment. If it be so, why be slaves, and why not arouse ourselves to the possibilities of our own business? The history of the paper business shows that while at all times we have been able to supply the legitimate demand of the newspapers, we have not sold our product upon the basis we consider it should be sold, and the conditions today are such that there is no reason why we should not set a basis of trading and live up to it—the matter of price will adjust itself.

No industry has ever prospered for any length of time where exorbitant profits were realized, therefore a legitimate manufacturing profit is what we should look to, and in that way not invite overproduction, through investments made in new mills, and our customers should not object to this.

The reports on the different grades of paper show the conditions as existing in those particular branches. Co-operation in modern business is more necessary now than ever before, and is being followed in every line of business today that I know of. Unrestricted competition is of no advantage to the consumer, and is ruinous to the manufacturer. The Government of the United States, as a rule, does not want to see any industry crippled, and in most industries lends a helping hand; but in ours we seem to get the "paternal" hand rather than the governmental.

THE INDUSTRY'S INTEREST IN CONSERVATION.

Conservation of the natural resources of this country we are as much interested in as any manufacturers could possibly be, and I believe that we are conserving much better than many other industries. While we are often referred to as the ones who are using up the forests, we are never given credit for using materials which would otherwise be wasted. A large quantity of our paper is made from material which would otherwise be wasted, but for our manufacturers. We are, where it is possible, lending our aid to every legitimate proposition toward conservation. We believe that the water powers of the States should be increased through proper storage reservoirs, and the manufacturers in our line, I believe, are quite willing to co-operate with the different State governments, with a view of standing a legitimate share of the expense.

The labor bureau established at the headquarters of the association, I believe, has been of great benefit to the paper making industry and to the employees. We intend to treat all men fairly, and to recommend for positions, without charge, men who are worthy.

Production in the principal grades of paper has apparently had about its usual increase over other years, except in the case of box board, where there is apparently an overproduction, which has been brought about by the installation of new machinery in places least expected, and no doubt the investors will be chagrined by the returns they are getting from their investments.

THE INCREASE IN MEMBERSHIP.

At our meeting in 1908 we had 100 active members, in 1909 we reported a membership of 164 active manufacturers, in 1910 we had increased it to 200, and I am much gratified to report at this meeting an active membership of 235; but it should be brought to the attention of every manufacturer who is not a member, by our members, that it is his moral duty to join a national association which is being run upon the broad lines this one is being operated upon. No man's business is so exclusive that he is not affected by general conditions, and to make it better, we should have every legitimate manufacturer a member, and I trust that each member will make himself a committee of one to get in new members.

THE INCONSISTENCY OF OUR CRITICS.

We were criticized in one investigation to which we were subjected because we knew so little about the paper business as a whole; today, after getting this statistical information in pretty good shape, we are accused by some publishers of being a paper "trust," and with the very statistics which we were criticized for not possessing, we are threatened with prosecution because we have them and are not using them for the benefit of the publishers; we are actually in some cases running our business as to values through the knowledge of facts as disclosed by the figures we are gathering, which, of course, in itself is enough to condemn for a

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COMBINATION ROLL SHEET CUTTER AND SLITTER

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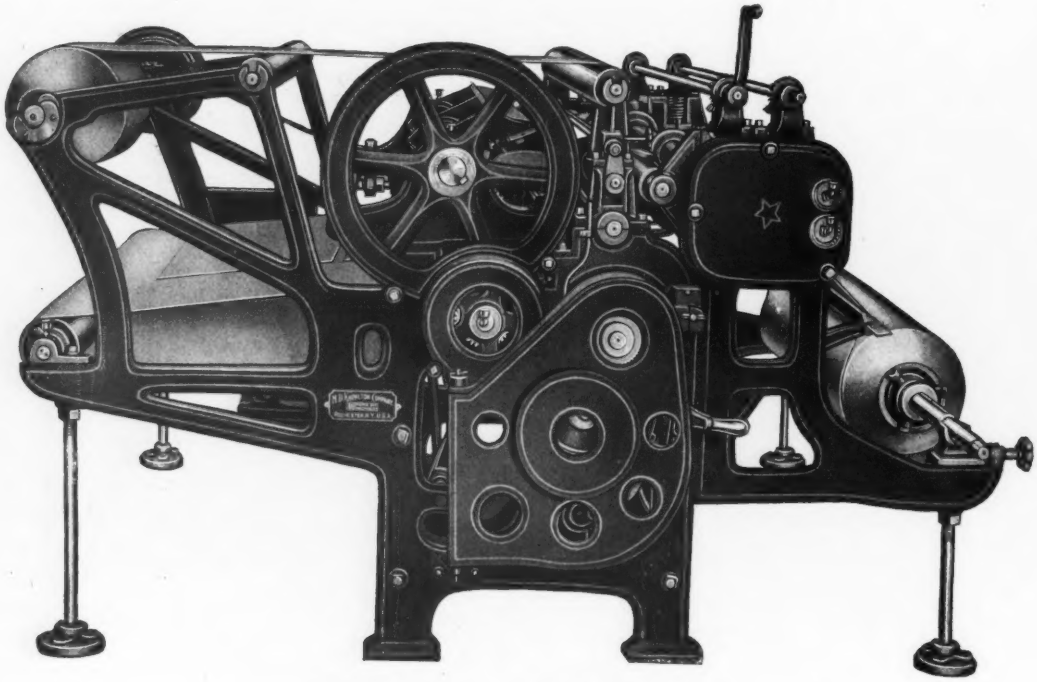

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long period of isolated imprisonment any manufacturer of any kind of paper, if the judge was the publisher. We are even accused now of starving the market, and a statement was made last week before the Ways and Means Committee by the representative of the publishers that we actually had on hand in this country only eight days' supply of news paper, yet to our positive knowledge the mills in this country have run all the time they could, and if water conditions are such as to improve manufacturing conditions during 1911 the chances are there will be a larger accumulation of paper at the end of 1911, unless business conditions are such that there is an increased demand, in which case it is safe to say that the manufacturers will take care of that demand through increased production. While this might be construed as an intimation that the production will be curtailed unless the demand takes care of the production, we all know as practical manufacturers that a good demand stimulates good production, and that poor demand naturally leads to slower running and less snap to the manufacturing end of our business.

Better Cost Systems Needed.

Many manufacturers are today awake to the fact that they should have a more exhaustive cost system, so that they may know what their costs are, and the only way to make a profit is to get more for the article than it costs. I believe that still further advances can and will be made in this respect, as manufacturers more fully realize the importance of it. Capitalization should fairly represent the money invested in the plant and depreciation should be allowed for in figuring one's profit.

I am glad to report that correspondence I have had with foreign countries has apparently interested them to the extent that we hope before long to have similar organizations for the gathering of statistics which shall be in touch with our association, so that we can, as a whole, run our business more intelligently than it has been run in the past.

Means of transportation and communication are bringing the markets of the world closer together, and these conditions should be promptly known and advantage taken of them.

I desire to call the attention of the members to the fact that we are gathering statistics on coating paper and board, and while some of the manufacturers in these grades are members of our association, others, not being direct manufacturers of paper, cannot under our by-laws become active members, and I would like some suggestions as to how they may be brought in as members, so we may have their co-operation and support. This business is so closely allied with the general paper business that it seems as though they should be members.

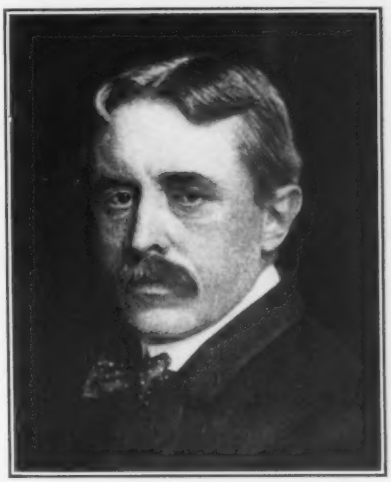
An Arbitration Board Should Be Established.

I have always been of the opinion that an arbitration board should be established to be carried on by members of the three great branches of the paper business, viz., the manufacturers, the jobbers and the printers, and I believe this could be brought about through co-operation with the National Typothetæ of America, the National Paper Trade Association and our association, so it would be possible to have an arbitration on any point at issue by men who are thoroughly acquainted with the terms and conditions surrounding the question and with a view of ironing out small differences and dissensions and, still further, with a view of improving trade customs with the end always in view of co-operation in the general paper business.

I believe for the further benefit of our members and for the paper manufacturing industry at large we could enlarge the scope of our association by taking in the matter of freight rates. We could have a freight bureau where all matters pertaining to freight, either foreign or local, could be looked up for any inquiring member; discrepancies in rates be taken up with the proper authorities with a view of adjusting them, and in a general way act as advisers to the manufacturers, who are often unaware of freight conditions, except at their particular shipping point, which may be on a road with no competition in rates, and in a broad way we could take the whole question up with a view of advancing it along lines already laid down by other large industries.

Should Have a Publicity Bureau.

I would suggest also that we have a publicity bureau, where new inventions relating to the paper industry may be investigated or new uses may be suggested for paper or pulp. In other words, a headquarters where anything pertaining to the paper industry as a whole may be taken up with a view of a larger field for our production. I know of several instances where we have so far been able to make suggestions which resulted in orders being placed in this country which otherwise would have been imported. This, of course, all means more income through a larger field of operation, and when one stops to think there is something like



George F. Steele,
Vice President American Paper and Pulp Association.

5,000,000 tons of paper made in this country each year and that a very small amount per ton would pay for a great deal more than we are now doing, it only emphasizes what I said before, that we should have a larger membership and a larger income. If the manufacturers would devote to this association the same amount of money that they in the aggregate spend for the annual dinner it would go a long way toward making our association more productive of good, and yet many men will not hesitate about putting money into something to eat when the same money put into the association would save them from being eaten.

I want to impress upon you that association work brings men closer together, and that one great result is that fellow manufacturers will believe each other rather than the men who buy.

I want to thank the members who have so loyally stood by the association and its officers. This same support and the new members we are getting will make us the power for good we should be. There can be much benefit to all members by suggestions and information regarding local or general conditions.

The report of the secretary-treasurer was next in order.

Report of Secretary and Treasurer

The report of Clarence I. McNair, secretary and treasurer of the association follows:

The president of the association and the vice president of the several groups in their reports cover in detail a review of the past year, and I desire to very briefly add only a few statements to the formal report of the secretary and treasurer.

President Hastings has shown himself a tireless student of the

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questions confronting the paper industry, and his well directed efforts have earned our hearty respect and co-operation.

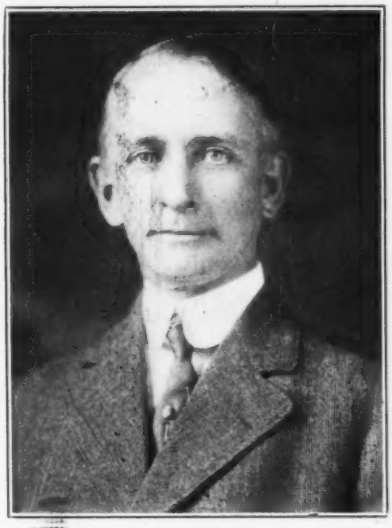
This is not a sentimental organization. It is not founded upon legend, nor is it given to reveries. It is not lulled to sleep by the droning of bees, nor influenced by imaginary voices in the air. It is a practical body, and its work is to help those actively engaged in the manufacture of paper to solve practical problems. To accomplish this purpose it aims to secure definite information from all parts of the world upon subjects of interest to the paper industry, and to disseminate to the mills this information. To do this work effectually, and to achieve results that will be of benefit, we must all stand firmly upon the broad principle of working together for the advancement of the interests of the industry, and the greater the concerted efforts the greater will be our individual success and intelligence.

The American paper manufacturer, as well as this association, has been unjustly maligned times without number, and while we look to the organization to lend its aid in defending unfair attacks, it will not be progressive if we call upon it to devote all its time and energy to our false accusers. In fact, the smallest thing in business is the futility of constantly harping upon the antagonism of consumer and producer, between whom harmonious relations should prevail.

What we expect of the association is that it will be our gathering place for statistics relative to our industry, as well as information regarding manufacturing processes and raw materials.

We must aim not only to maintain the high place that the manufacture of paper holds in the United States, but also to elevate and broaden this position, and we believe that only by co-operation and organization and by a greater knowledge of our business can we achieve these results.

In closing, I wish to take this opportunity to express the very great appreciation I feel in having been elected as the honorary secretary and treasurer of the association. No one could have feelings other than those of deep gratitude for having been thus chosen, and I shall endeavor to show my greater appreciation by



C. I. McNair,
Secretary and Treasurer American Paper and Pulp Association.

devoting what time I may be able to spare in furthering the interests of our great industry.

Nevertheless, had I been present at the meeting of the executive council who named me for this office, I would have insisted that the office of secretary and treasurer should not be held by anyone directly connected with the active management of any of the mills. The position of secretary and treasurer is of so great importance that he who holds this title should perform the very active duties

Arthur G. Maury,
Assistant Secretary and Treasurer American Paper and Pulp Association.

involved, and have especial charge of the office work and statistical bureau. The report from the book division followed.

Report of the Book Division

The report of David L. Luke, member of the Executive Council representing the Book Division, follows:

Mr. President and Gentlemen of the American Paper and Pulp Association—The past year in the book paper business has been just an ordinary routine year, characterized by the usual periods of activity and dullness, due to the usual causes, and producing on the whole, I believe, a fairly good result.

Total Production of Book Last Year, 749,125 Tons.

The total production of book paper for 1909 was given as 717,300 tons, which was probably rather a high estimate, an inaccuracy due to the fact that it was not then possible to get the figures as accurately as we are now able to get them through the records of the American Paper and Pulp Association. For 1910 the actual product shows 749,125 tons, which gives an increase over 1909 of 4.4 per cent. However, as I have stated, it is probable the production for 1909 was overestimated, and I think it is fair to assume the increase of 1910 over 1909 was about the regular normal increase, viz., about 8 per cent. The actual producing capacity for 1910 was 783,432 tons, from which it will be seen there was actually produced 95.6 per cent. of the total productive capacity.

It is hardly necessary to call your attention to the fact that toward the end of 1910 we have had to contend with some overproduction. This condition is due principally to the fact that the capacity of the book mills has been materially increased by the installation of new machines, and also somewhat by the usual rebuilding of old machines.

The consumption of our product normally increases annually at the rate of about 8 per cent., but, unfortunately, the ambition of the manufacturer has increased at a higher rate, with the constant tendency to overproduction, and, consequently, a corresponding tendency to somewhat lower prices.

For 1911 we are promised about a dozen additional large machines, with a probable annual output of about 60,000 tons. This will more than take care of the normal increased consumption, and with already some overproduction, the situation, to say the least, is not encouraging.

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SODA or SULPHATE RECOVERY

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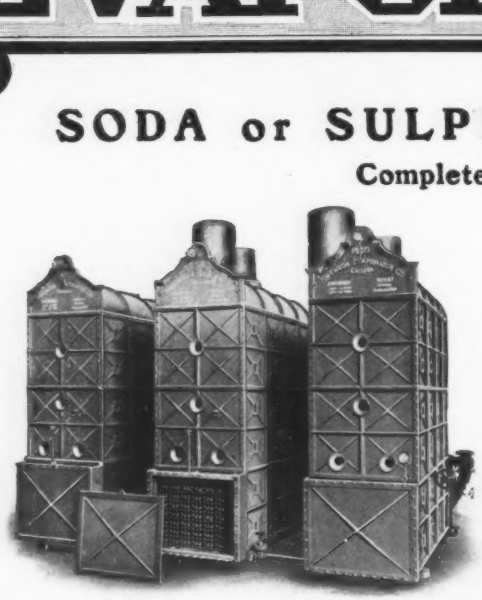

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This equipment has become the recognized standard of the United States for the concentration of a large variety of liquors. The design and construction are being constantly changed to suit conditions.

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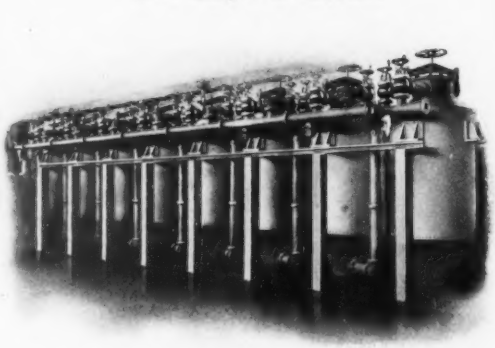

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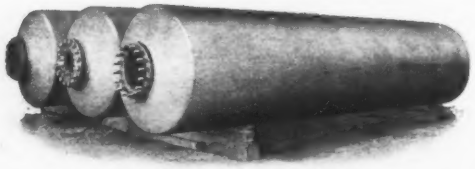

LAP WELDED DIGESTER

These shells have no rivets, the weld is absolutely complete, tested and guaranteed. Our standard design of digester is a radical improvement over those in use in the older mills.

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Used for Sulphate and Soda Process All Sizes

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EVAPORATORS

Thirty New Coating Machines to Start Up.

In making the annual report coated or enameled book paper has heretofore been disregarded. As nearly as can be estimated, the normal productive capacity for 1910 was 240,000 tons. There has actually been produced, however, only about 180,000 tons, showing the mills to have run at about 75 per cent. capacity. In the face of this situation there are proposed at present for this year something like thirty new coating machines, with a probable productive capacity of 35,000 to 40,000 tons per year. If the mills which are now running at only 75 per cent. capacity were to run full, and the additional machines were also to run at full capacity, it will be seen the output would amount to about 280,000 tons per year, or, based on consumption of 1910, would mean an overproduction of something like 60 per cent., as against 33⅓ per cent. for 1910. To be sure, there will probably be a somewhat increased demand. However, the outlook for the coating manufacturer at this time is not entirely pleasing.

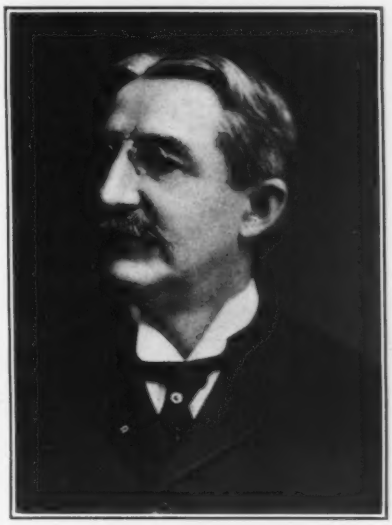
There has existed, as you all know, a rather sluggish condition of general business during the latter part of 1910, which may be traced to several causes, among which may be mentioned the unsettled political condition and the conservative action on the part of the railroads in buying all classes of material, particularly steel, pending the settlement of the rate question. These conditions naturally affect the business throughout the country, and, incidentally, book paper suffers a decrease in demand for its product.

Mills Buying Sulphite Have Prospered.

It is only proper to state that the mills making none of their raw materials, but buying their sulphite, soda pulp and old papers, have, due to the exceedingly low prices of these commodities, been sharing an undue proportion of such prosperity as there has been in the book business during the last few years, and that the mills making their raw materials have, consequently, not been doing proportionately well. This state of affairs is not likely to continue, however, as there is no question whatever but that sulphite, at least, has been selling—due to the overproduction in Europe—at a price which nets in many cases to the European manufacturer a

Arthur E. Wright,
Member Banquet Committee American Paper and Pulp Association.

certain loss. The foreign manufacturer has been willing to dump his pulp in this country at ruinously low prices, and has been able to do so by keeping up the price at home. The demand in Europe for sulphite has been steadily increasing, and the manufacturers have awakened to the fact that there is no occasion for their ridiculously low prices in this country, from which fact we may deduce as a certainty the result that the price of this raw material is going to be higher. It has long been well known that the soda



W. X. Caldwell,
Chairman Banquet Committee American Paper and Pulp Association.

pulp manufacturer has been making no profit at the prevailing prices.

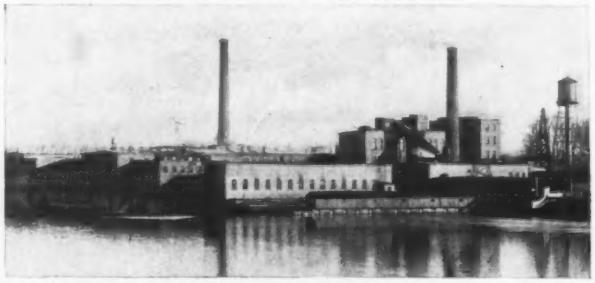
The Question of Postal Rates.

We have bequeathed to us from last year the unsettled question of increased postal rates. This increased rate is proposed for the sake of decreasing a postal deficit caused rather by political complications, imperfect business organization and general bad management of the business by the Post Office Department. In this case we take the position of the publisher, viz., that no change should be made in postal rates until such time as a proper basis for making the change can be determined. We understand the publisher is perfectly willing to pay his full proportion of carrying on the postal business, provided the rates are based on actual cost of proper operation. We have a strong hope that on account of the short session of Congress the attention of the legislators will be so taken up in other directions that the matter of postal rates will be deferred, and that before they are changed the question can be so thoroughly thrashed out that the new rates, when they are made, will be properly proportioned.

Reciprocity a Grave Menace.

Probably the subject of gravest importance to the American paper manufacturer today is the reciprocity negotiations between the officials of the United States and Canada, on account of its far-reaching and long-lasting effect. By the proposed arrangement every kind of pulp and paper manufactured in the United States will be seriously affected. All grades of Canadian pulp and paper will come into our markets free of duty, provided the wood from which the product is made is cut from private lands, until such time as all her provinces take off the prohibition from Crown land wood, whereas we American manufacturers will have no access to the Canadian market excepting at a higher rate of duty than under the last Payne tariff law. Within a comparatively short time news print from Canadian markets will be unloaded upon us to such an extent that it will force American news mills, not exceptionally well located, to make other grades, some of which will undoubtedly adopt book paper, with the consequent result of increased compe-

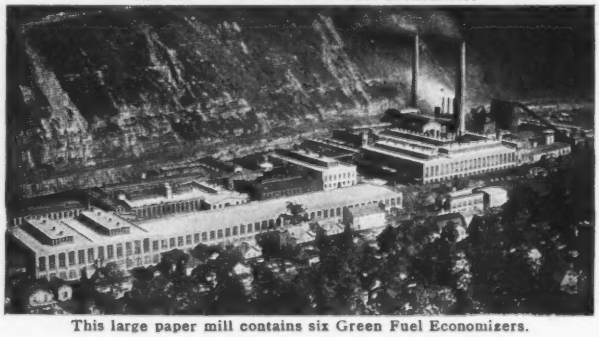
This mill is equipped with two Green Fuel Economizers containing 18,606 square feet of heating surface.



This and two other large mills belonging to the same company are equipped with Green Fuel Economizers

This mill is equipped with two Green Fuel Economizers containing 24,990 square feet of heating surface. The Economizers receive water at about 205 degrees Fahr. and raise its temperature 60 or 70 degrees.

This mill contains a Green Fuel Economizer.



This large paper mill contains six Green Fuel Economizers.

HEAT ECONOMY IN PAPER MILLS

Heat costs money. Money is spent for fuel and even if you are using only waste material for fuel, it costs money to maintain boilers, settings and chimney, and to pay the wages of firemen, and the expenses of cleaning and repairing boilers.

If you can recover heat that has hitherto been wasted without excessive expense for apparatus or maintenance, it becomes a pure saving.

The waste gases of combustion passing up the chimney represent one of the greatest wastes of heat in a paper mill. These gases are frequently above 500 degrees Fahr. in temperature, and each 20 degrees is equivalent approximately to 1 per cent. of the fuel bill.

A Green Fuel Economizer installed in the smoke flue between the boilers and the chimney will absorb enough of this heat to repay from 30 to 70 per cent. of its own cost in a single year. Suppose you put down the interest on the investment in the economizer at 6 per cent. and we will guarantee its up-keep for 1 per cent., making a total of 7 per cent., and assuming the most unfavorable conditions, suppose it only recovers 40 per cent. of its own value per year. Forty per cent. less 7 per cent. is 33 per cent., a clear increase in income without further effort, investment or attention on your part.

We shall be pleased to refer you to any number of large mills where these figures can be confirmed. In one plant, for instance, a Green Fuel Economizer is reducing the temperature of the waste gases from 405 to 250 degrees Fahr.; in another from 445 to 250 degrees Fahr.; in another from 450 to 310 degrees Fahr.; in another from 450 to 260 degrees Fahr.; in another from 430 to 280 degrees Fahr.; in another from 472 to 275 degrees Fahr.; in still another from 450 to 330 degrees Fahr.; in another from 500 to 330 degrees Fahr.

Where a Green Fuel Economizer is installed, careful firing becomes less important. Inasmuch as power plants are having great difficulty in maintaining high class furnace conditions, the provision of heat recovery apparatus, like the Green Fuel Economizer, is of the greatest importance.

GREEN HEATING AND DRYING EQUIPMENTS

Several of the plants illustrated in the accompanying photographs are not only equipped with Green Fuel Economizers but are also heated by Green Hot Blast outfits, and the paper is dried by Green Apparatus. We have been leaders in the devising of improved methods for drying paper of all kinds, including coated paper, and if you are having any difficulty with drying, or wish to increase your drying capacity, we should be pleased to make suggestions and to direct you to work that we have done.

Upon receipt of particulars concerning your boiler plant or heating or drying requirements, we shall be pleased to send one of our engineers, or to make an estimate by mail if enough details are given.

Write for copies of our pamphlets "P. J. 131," on "Heat Economy for Paper Mills," and "P. J. 126," on "Drying in Industrial Establishments."

The Green Fuel Economizer Co.

MATTEAWAN, NEW YORK

tition and greatly surfeited markets. As it is now proposed to change the duty on such articles as we use in our manufacture, we shall find ourselves buying in a "protected" market and selling in a "free trade" market. Such things as labor, chemicals, filler, clothing, in fact, practically everything going into book paper, will still carry their present comparatively high duties. The significance of the reciprocity arrangement, as at present outlined, is unmistakably serious for paper manufacturers, and every available legitimate measure should be used by the manufacturers to impress upon the legislators and those holding influential positions the injurious effect of such a treaty upon one of the important industries of the country.

We are glad to note that during the past year several companies in the West have increased their capitalization, which is decidedly a step in the right direction. It is a step toward much needed accuracy in statistics, and accuracy is one of the most necessary features in the successful transaction of business. It is a necessity for those whose interests are involved, and also a necessity for those who claim the privilege and right to criticize.

SHOULD CHARGE OFF FOR DEPRECIATION.

A year ago your attention was called to the total disregard on the part of many manufacturers to the item of depreciation of plants. This is a very important matter, and as it involves much inaccuracy of results, it should receive very careful consideration on the part of those who attempt at all to obtain accurate figures in regard to profit and loss. If this item of depreciation were actually considered many plants would, without doubt, find themsevles running at an actual loss instead of a profit, as they make themselves believe. Depreciation is a very complex matter, and is subject to general argument, but those best qualified to reach a decision have agreed that the rate of depreciation should be about 7½ per cent., and many large manufacturers are using this figure in making up their costs.

With accurate statistics showing capital invested, cost of production (including depreciation), losses involved and dividends declared we have no need to fear threatened action against the American Paper and Pulp Association, which publishers please to call "The Paper Trust." It is a business organization, and, due to the most excellent work of Mr. Hastings, is on a firm, practical working basis, representing a legitimate and dignified business. Its meetings should, naturally, give to the individual manufacturer a feeling of security on account of dependable information furnished, and they do establish pleasant intercourse between competitors and a greater confidence between manufacturer and consumer. For these beneficial results we are much indebted to Mr. Hastings, through whose efforts the association has become a power for advancing the interests of its members.

I most strongly urge all manufacturers to join the association and to contribute such information as is requested, as there is no doubt but that all members will receive mutual benefit, and I feel confident that the co-operation of fellow members and the statistical information which will be accumulated for our use will greatly aid in solving the many problems for the present year.

Report of Writing Division

The report of A. W. Esleeck, member of the Executive Council representing the Writing Division, follows:

MR. PRESIDENT AND GENTLEMEN—The year 1910 opened with an encouraging outlook for a satisfactory business. The industries of the country that had been more or less disturbed by the uncertainties of the pending tariff legislation of 1909 began to adjust themselves to the new schedules, and the demand for our particular product for the first six months of the year showed a satisfactory increase.

The water conditions during the first half of the year were favorable and the statistics furnished by the office of the national association showed 94 3-10 per cent. of normal product made and 98 per cent. shipped.

During the last half of the year, however, the mills along the Connecticut river and in some other sections of the country suffered severely from a low run of water, with the result that but 87 per cent. of the normal was made and 85 per cent. shipped. These figures taken by themselves, however, do not fully explain the volume of business transacted by this division, from the fact that the normal output of the writing mills showed an increase of about 10 per cent. or 50 tons per day, or a daily average of 550 tons, as against a normal output of 500 tons per day in 1909.

THE TONNAGE IN 1910.

The actual product in 1909 was 429 tons, and in 1910, 500 tons. Thus the actual product in 1910 equaled the normal or maximum product of 1909 and exceeded the actual product of 1909 by about 70 tons per day.

The reports from the entire group of mills show that the sales have practically kept pace with the output.

The above facts are evidence of a healthy growth in our branch

A. N. BURBANK,
Chairman Reception Committee American Paper and Pulp Association.

of the industry. Prices have remained fairly stable throughout the year.

Trade is more or less affected by the importation of foreign papers, many of them sold at prices that eliminate the question of competition. Lightweight manifold, writing and bond papers are being imported under such names and forms as to make their classification very difficult. These papers come in rolls, and sometimes in book sizes, and are entered as printing papers, carrying a duty of 15 per cent. instead of 3 cents per pound, and 15 per cent. ad valorem, as provided in the tariff.

The writer has been called to New York twice during the year, once to testify in a case before the chief appraiser, and once in conference.

These matters have been referred to the National Association, which will endeavor to keep all parties interested informed on the subject.

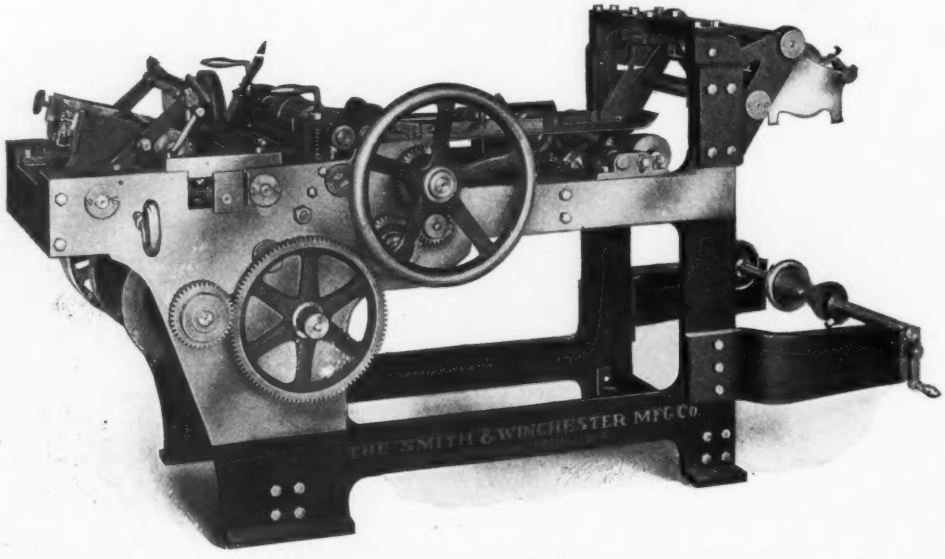
Again the business interests of the country are facing the uncertainties of tariff revision. Whether or not it is better to be content

BAG MACHINES

WE MANUFACTURE THE MOST COMPLETE LINE OF BAG MAKING MACHINERY EVER OFFERED.

SQUARE FLAT SATCHEL BOTTOM
TUBERS BOTTOMERS
BANANA BAG *and* MILLINERY BAG MACHINES
CEMENT *and* FLOUR SACK MACHINES

For All Sizes of BAGS from the Smallest to the Largest.

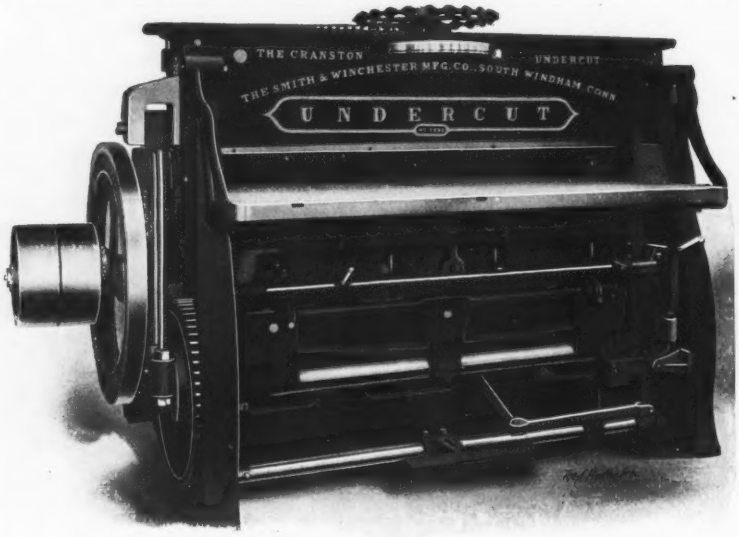


The Smith & Winchester Manufacturing Company

SOUTH WINDHAM, CONNECTICUT, U. S. A.

Makers of the various types of machinery used in the manufacture of Paper.

STRAIGHT and HARPER FOURDRINIERS, FOURDRINIERS with EDWARD'S ATTACHMENT, CYLINDER MACHINES, WET MACHINES, REVOLVING CUTTERS, WINDERS, REELS, JORDAN ENGINES, PUMPS, Etc. Also The Celebrated UNDERCUT (CRANSTON) TRIMMER



The Undercut Trimmer

The Cutter that clamps the stock securely and cuts every sheet accurately. **WHY?** Because the construction is such that the resistance against the knife in cutting is expended in pressing the clamp more firmly on the stock which is being cut, holding it firm and not allowing it to draw as with most Cutters. It is the strongest Cutter made.

with the present evil than to flee to dangers we know not of remains to be seen.

A meeting of the Writing Division was held at Chicago in November, and matters of vital importance to our association were discussed, among other questions that of our trade customs received prominent attention.

We believe there should be a better understanding between the manufacturer and the jobber with relation to the trade customs. There is a disposition on the part of some of the members of the jobbers' association to ignore certain portions of them.

We would call attention to the fact that on two occasions these trade customs were approved without any qualifications by the representative of the jobbers' association, and any attempt to disregard their provisions weakens the harmonious relations that now exist between themselves and the manufacturers and will inevitably lead to irreparable injury to both.

TRADE CUSTOMS THAT ARE EQUITABLE.

For the first time in the history of our industry its several branches have established trade customs that are just and equitable to both buyer and seller, and it is for our mutual interest that we abide by them until such time as a change or modification may seem expedient in the interests of both parties.

When this association was formed its main object was to have an association that would be mutually helpful to the manufacturer and to his customers, and trade customs were adopted and accepted that were intended to give no man in the trade an advantage over another. It is therefore clearly in the interests of all that these rules of the trade be securely guarded.

It was suggested at the meeting that our trade customs might be made more effective and more free from misunderstanding by establishing a closer relationship between our association and the American Paper and Pulp Association, and it was voted that A. C. Hastings, president of the American Paper and Pulp Association, be our executive secretary, with power to call meetings and assist in settling any matters in dispute or misunderstandings that may arise between the manufacturer and the jobber.

The question has arisen whether as an association we are violating any provisions of the Sherman law. I believe our trade customs have been submitted to the proper authorities in Washington and met with no adverse criticism.

During the year two of our associates have passed into the "beyond": the Hon. William Whiting, who, I believe, was the first president of the National Paper Trade Association, and C. M. Burnett, former president of this division.

In conclusion, let us hope that the tendency of our association may be toward a larger measure of mutual helpfulness and a broader field of usefulness.

Report of the News Division

The report of F. J. Sensenbrenner, member of the executive council representing the news division, follows:

MR. PRESIDENT AND GENTLEMEN—During the past year the production of news was materially below the productive capacity of the mills of the country—during the first half of the year on account of the strike of the employees of the International Paper Company and the last half of the year on account of the severe drought which extended over all of the paper making districts of the country.

As a result of these conditions production and shipments were pretty evenly balanced, whereas if all the mills had been able to operate at full capacity there would undoubtedly have been a material surplus.

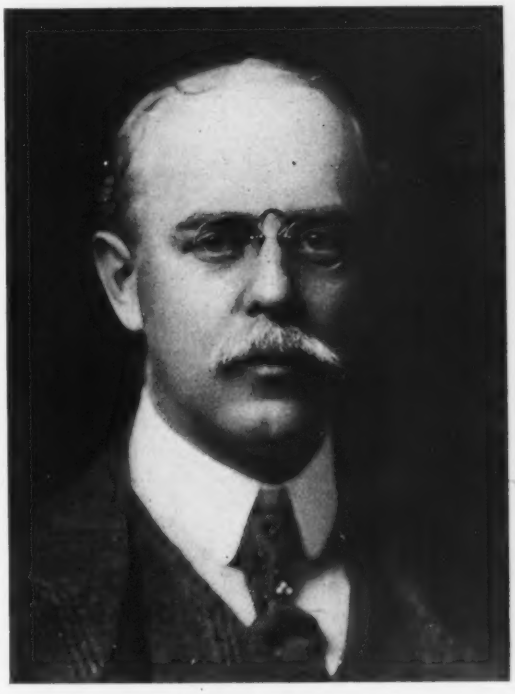
INCREASED IMPORTS DUE TO TARIFF.

The reduction in the duty by the tariff bill of 1909 has resulted in a material increase in the importation of news to this country. In view of this experience, if the bill now before Congress should become a law it is fair to suppose that it would mean the gradual transfer of the industry to Canada.

The paper pulp provision of the bill contains no element of reciprocity, for, as it has been construed by so good authorities as Congressmen Mann and the chairman of the paper committee of the American Newspaper Publishers' Association, it would give us free paper and pulp without removing restrictions upon the exportation of wood cut from Canadian Crown lands.

Your association is doing everything possible to secure the elimination of this unfair provision of the bill, and should have the loyal and energetic support of not only every member of the association, but everyone connected with the industry, directly or indirectly.

The benefits of association were made evident in the fight on the tariff, and again in the present campaign, and should induce



ARTHUR D. LITTLE,
Official Chemist American Paper and Pulp Association.

such manufacturers as have not yet become enrolled to send in their memberships without delay.

Report of Wrapping Division

The report of George W. Sisson, Jr., member of the executive council, representing the Wrapping Division, follows:

MR. PRESIDENT AND MEMBERS OF THE ASSOCIATION—In reporting to your honorable body last year attention was called to the great magnitude of the wrapping paper industry, with the statement that this fact and the close and sympathetic relation of our branch to other phases of the paper and pulp industry were strikingly shown by our present system of statistics. It may be of interest to note that the Wrapping Division produces a little more than one-seventh of the total production of paper of all kinds, report of which is made to our association. Until recent years this division scarcely knew the meaning of the word "co-operation," and each mill was a law unto itself, and the legitimate prey of the buyer. One or two attempts at co-operation in standardization of product, method of selling and the maintenance of fair prices have been made heretofore, and while temporarily beneficial, have succumbed to attacks from without and minor dissensions or lack of co-operation within. With the reorganization of our association on

The Sandy Hill Iron
Hudson Falls

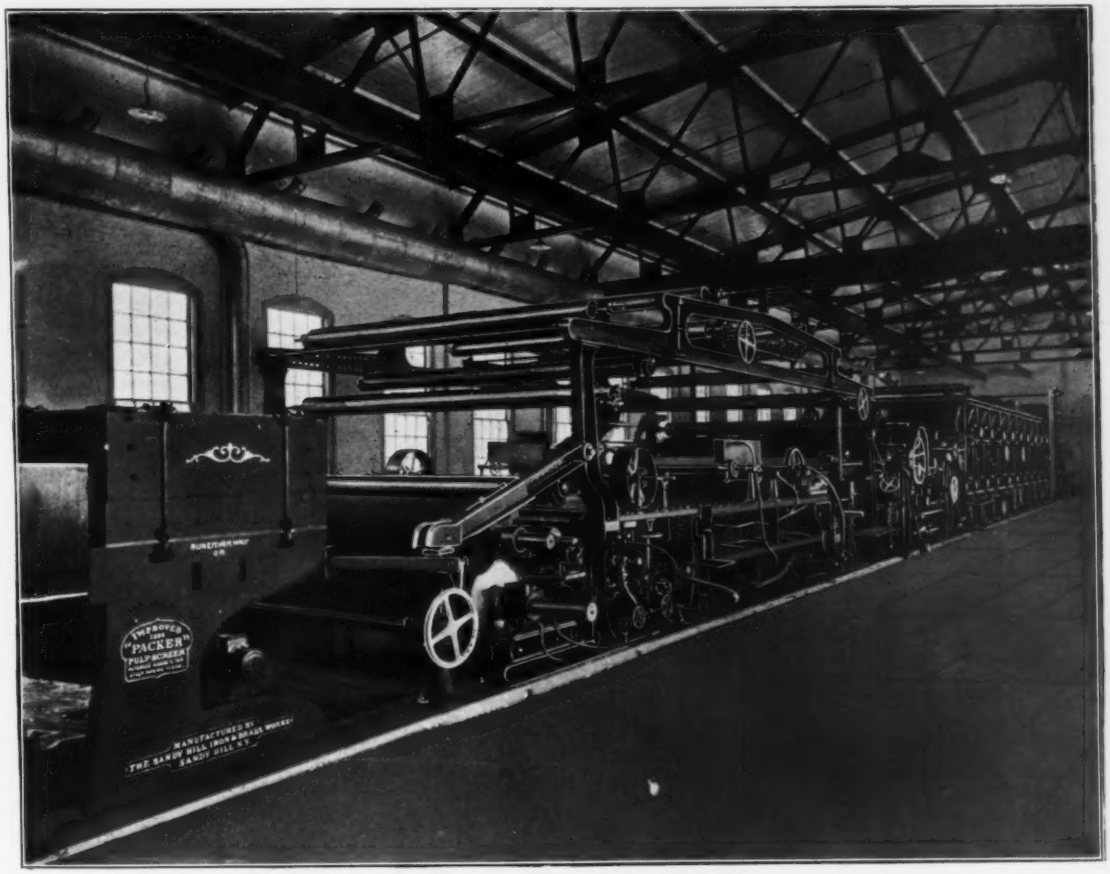
These cuts show a 130 inch Ideal Harper Fourdrinier Paper Machine recently installed in the Paper Mill of The Northern Paper Mills, Green Bay, Wis.

Send for Our Bulletins

and Brass Works

New York

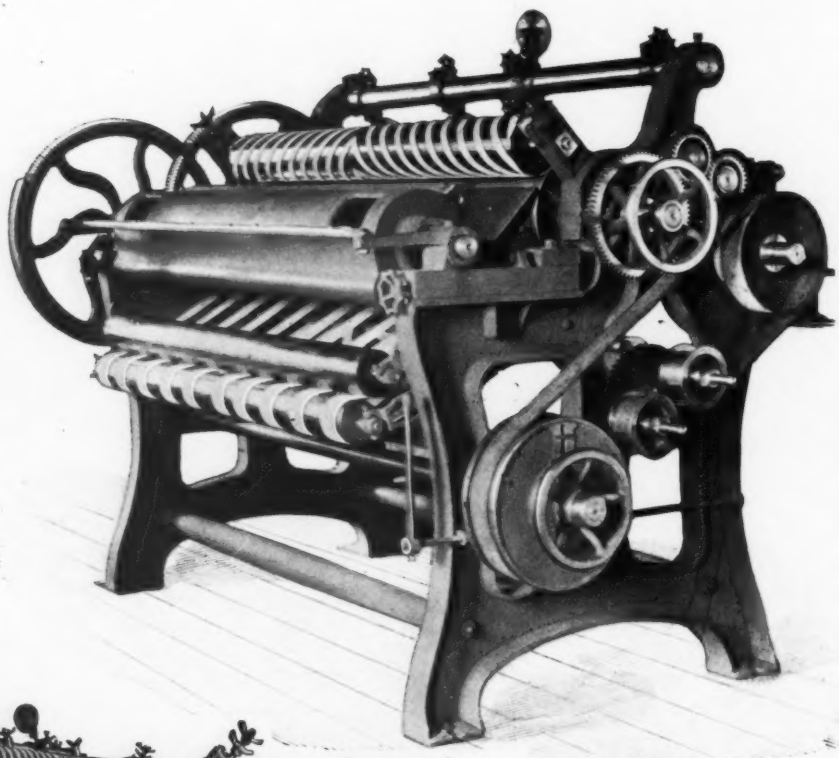
This machine is equipped with all of the features that have been so successfully employed on our Ideal Fourdrinier Machine. Patented Fourdrinier with adjustable wire pitch and suspension shake, patented trunnion boxes for wire and felt rolls, patented upright Reels, grease boxes throughout machine.

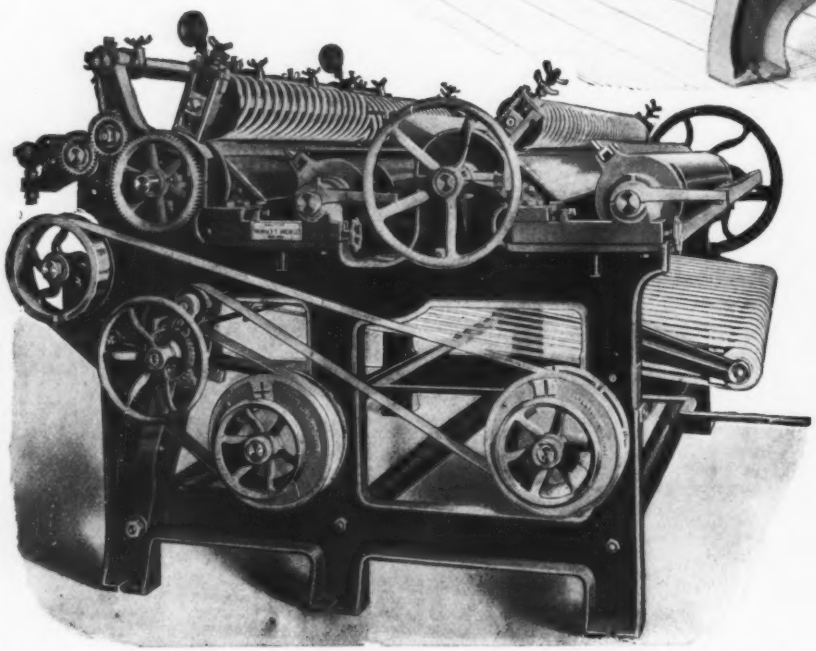


Describing "THE IDEAL"

PAPER CUTTERS

Single
Duplex
and
Diagonal





CUTTER
KNIVES

PATENT
TOP
SLITTERS

Hamblet Machine Co.

LAWRENCE, MASS.

its present lines, and the establishment of our statistical bureau, which is admittedly one of the best maintained by any industrial association, the Wrapping Division has made remarkable increase in the number of mills co-operating in the interchange of facts as to production and shipments and general business conditions.

STATISTICAL RECORD OF THE DIVISION.

The statistical record of this division begins with the month of October, 1908, and was then participated in by twenty-seven mills, with a normal monthly output of 26,703 tons. At the time of our report a year ago, after fifteen months' operation of our bureau, the number of mills had increased to fifty-five, with a normal monthly output of some 41,000 tons, all giving and receiving these valuable statistics. We now have the pleasure to report that during the past year the number of mills has increased to sixty-five, with a normal monthly production of 50,868 tons of wrapping paper. Our association estimates the total possible daily production of wrapping paper of all kinds in the United States today to be 3,261 tons, of which about 1,900 tons are being reported through our association. It also estimates that we have as members of the American Paper and Pulp Association just 60 per cent. of all the manufacturers of wrapping paper in this country. These figures show that while we may be proud of our growth, we are still far short of the membership we should have. Full statistics would eliminate all doubtful factors and enable us to maintain stable conditions without fear of their being upset by the outside manufacturer, who is either too narrow minded to join our movement for the general benefit of the industry or too selfish to be fair with his competitor.

THE PRODUCTION DURING 1910.

Durng the past twelve months the mills reporting to our bureau have actually produced 443,467 tons of wrapping paper, which was 84 per cent. of their full normal production. This paper was all shipped and went into consumption and there is no accumulation

GEORGE E. BARDEEN,
Member Banquet Committee American Paper and Pulp Association.

of stocks either at the mills or in the hands of the jobbers. This indicates a healthy condition. There has been no artificial curtailment of production, but extreme low water conditions both East and West during part of the season cut the production and materially increased the cost.

PRICE AND DEMAND.

Prices on all wrapping papers made from wood fibres are admittedly too low. The jobber who distributes our goods is equally aware of this fact, and finds his profits no greater because of the low level, to which from one reason and other our prices have been depressed. While all our goods have been taken into consuming channels, as our statistics have shown, and while this should have had a sustaining influence on prices, the year generally has seen a slight easing off in price from a year ago. There is no warrant in general business conditions for this, and it would seem wise for each individual manufacturer to study his

F. J. SENSENBRENNER,
Member Executive Council American Paper and Pulp Association.

cost sheets more closely and set his own selling prices at a proper figure rather than taking his usual attitude of asking the jobber how much he will give.

In last year's report we congratulated ourselves on the outcome of tariff legislation as affecting wrapping paper. It was not predicted that the increase in the duty would check importations of those grades which were threatening our market, nor has this been the case, but out statement that the increased duty would lead the American manufacturer to change his processes and improve his methods, so as to turn out stronger and better papers, has in a measure come true, and the domestic manufacture of kraft and other strong and light weight papers has rapidly increased.

Our alarm at tariff agitation is again excited by the proposed reciprocity treaty with Canada, and the wrapping industry is particularly interested in the matter of the free importation of chemical pulps, both sulphite and kraft, and the paper made from such pulps that may come in free from Canada. This matter needs our careful attention, as it is likely to affect our price unfavorably.

MEMBERS URGED TO CO-OPERATE FOR BENEFIT OF ALL.

In closing let me urge upon the manufacturers of wrapping paper: First, that they take proper pride in their branch of our great industry; second, that they conduct their business, based upon ascertained facts as set forth by our association, in a manner that will bring a fair profit to themselves and to their fellow manufacturer.

That feeling of confidence and pride in our business so essential to its successful conduct have been in a measure lacking. Timidity and hesitation have marked our conduct in the sale of our products, and this very attitude of mind has been a large factor in the present low level of prices.

Report of Tissue Division

The report of W. O. Ball, member of the Executive Council, representing the Tissue Division, reads as follows:

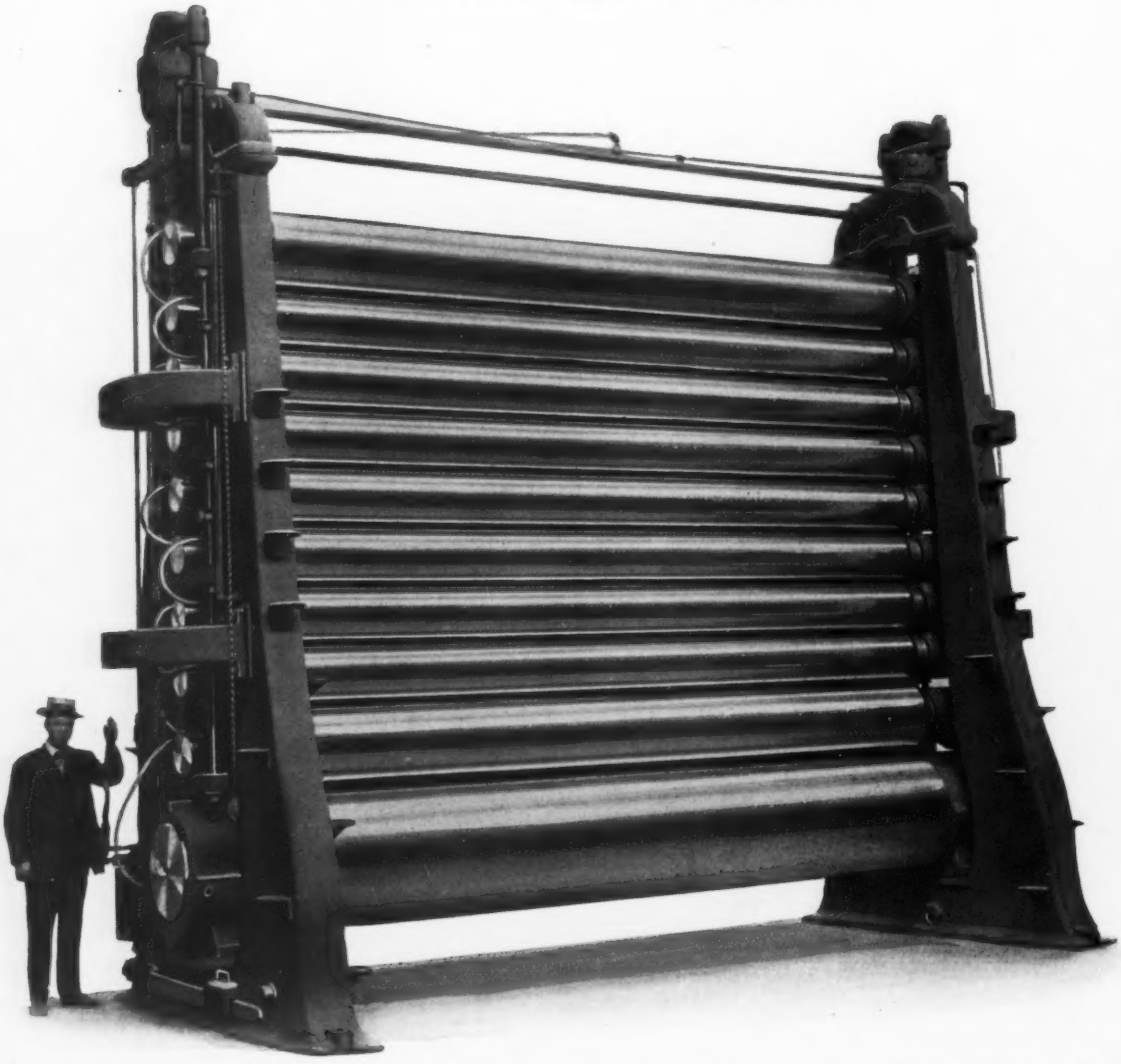
MR. PRESIDENT AND MEMBERS OF THE AMERICAN PAPER AND PULP ASSOCIATION—Another year has rolled around since our last meeting and the prediction made at that time in regard to the outlook for the tissue business for the year 1910, I regret to say, has not been fully verified. During the first six months prices were fairly well maintained, but with the advent of the sum-

FARREL FOUNDRY & MACHINE CO.

ANSONIA, CONN.

Builders of

Calenders, Chilled Rolls
and
Roll Grinding Machines



The above cut illustrates two stacks of 178 in. rolls, built by FARREL FOUNDRY & MACHINE CO. for a Pusey & Jones Fourdrinier machine now running at the mills of the Minnesota & Ontario Power Co., International Falls, Minn. The bottom roll is 30 in. in diameter, the top roll 18 in. diameter, and all rolls 178 in. face.

mer months, when we usually expect some decrease in the volume of business, the pressure of increasing stock on hand commenced to force concessions in prices.

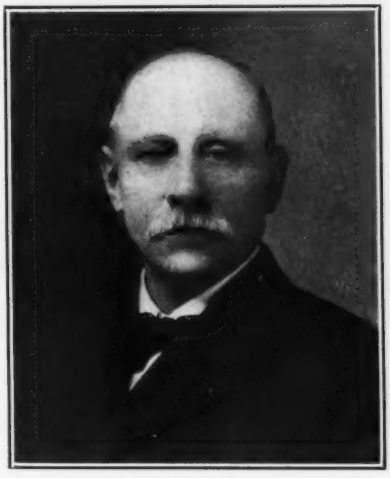
The tendency to lower prices was stayed for a short period in the fall by the natural increase of business at this season of the year, but the duration of the demand was for a short time only and prices did not advance to the level obtaining previous to the summer depression. Since the first of the year the demand has been light and prices weak and the margin of profit small and not in proportion to the capital invested and the risks of the business. I believe the cause for the present condition of the business is one of increased production and not under consumption.

Overproduction Hurts the Market.

The product of many new machines has come onto the market, and while the total tonnage of these machines is not so very large, the percentage that it bears to the whole production is sufficient to create a surplus. This can readily be seen from the fact that the stock of tissue paper in the hands of the manufacturers reporting to this association at the present time is about double what it was a year ago. With this condition existing it is impossible to predict what the future of prices will be. The outlook is certainly not too encouraging. The only encouraging feature is that not many new mills are projected, and if the normal increase in the consumption of paper equals what it is estimated to be it may be able during the coming year to take care of the increased production without necessitating any further reduction in prices. If, however, the proposed reciprocity treaty with Canada becomes effective the manufacturers of tissue paper will eventually be seriously affected in common with all other grades of paper. Canada certainly has cheaper raw material, and it will be impossible to successfully compete against this handicap.

It is gratifying to know that an increasing number of manufacturers of tissue paper are reporting to this association and thereby availing themselves of the very valuable statistics furnished by it.

We have now a normal production of nearly 4,500 tons per month reporting, which is probably about 75 per cent. of the total production by all the mills in the country making this grade of paper.



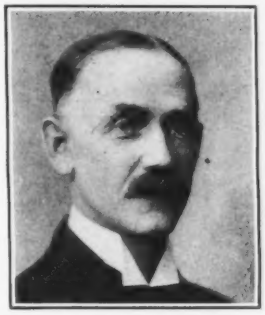
A. W. Esleeck,
Member Executive Council American Paper and Pulp Association.

It seems as though every mill should appreciate the value of these reports, and it is earnestly desired that every mill co-operate along this line to the end that we may all be better informed in regard to the condition of the market, and thereby conduct our business more intelligently.

Report of Bag Paper Division

The report of Frank L. Moore, member of the executive council, representing the bag paper division, follows:

"In making my report for the bag division at our last annual meeting of this association, I believe I made the statement that the report must necessarily be a brief one, inasmuch as bag paper



Geo. W. Sisson, Jr.,
Member Executive Council American Paper and Pulp Association.

is so closely allied with wrapping paper that in my judgment they should not form two separate divisions. Not having changed my ideas in this respect, I have not come here today prepared to make any lengthy report on the subject matter.

"This division being in its infancy, I recommended to you a year ago that careful treatment be accorded it if it were to thrive and grow. But I find that poachers came upon our preserves early in the year threatening our annihilation. These poachers were not satisfied to share equally with us the orders that were to be obtained at that time, nor were they satisfied to employ the same sort of ammunition used by us in the securing thereof.

"By 'poachers' I mean the mills that ordinarily manufacture other grades of papers than bag papers. With their inexperience in the manufacture of the latter grades they thought the cream on our milk was too thick, and proceeded to cut prices, with the usual result that they secured more or less tonnage, and caused such a demoralization in the bag paper market that at various times there did not appear to be any market price on this grade of paper.

"I know that competition is not only the life of trade but of everything else. But when I have heard some of our members make statements in regard to the market prices put upon their papers, and know the prices which they actually received for those same grades of papers, there have been times when I have thought there was no competition in truth telling.

"However, we are all heirs to the knowledge of the past—although we may not have to pay an inheritance tax on it—and I believe the experience of some of those mills has been that they have found the regular market prices for the standard grades of bag papers at that time were none too high; but the result was that many mills that had formerly confined their line of manufacture largely to bag papers were forced to go into the wrapping paper market.

Substitutes Were Manufactured.

"In speaking of the standard grades of bag papers which have maintained in the past I desire to call attention to a condition which has arisen during the past year. On account of the demoralized condition of the bag and bag paper market some paper mills manufactured intermediate grades, which were put out in substitution of the regular grades. I believe that this method of cheapening the standard grades should be discontinued, as it has a tendency to further demoralize conditions. Each manufacturer should adhere strictly to the old established standard grades if we

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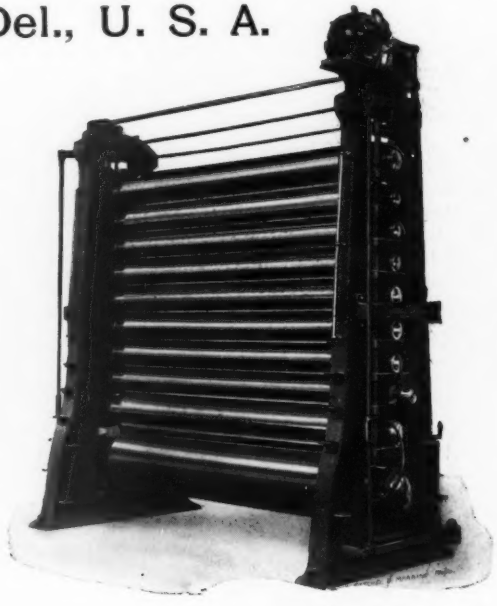
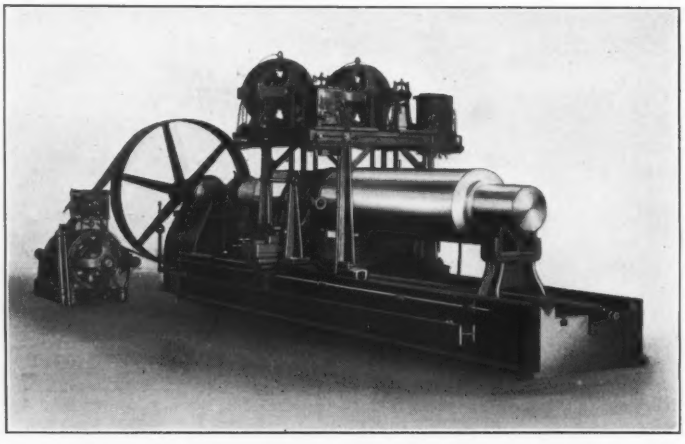


Grinding Machines



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are to maintain a uniform standard market. We should not be tempted by lower prices to change our standards of manufacture.

PAPER MILLS TO MAKE BAGS.

"In reporting upon the condition of the bag paper market during the past year it seems necessary to refer to the market for bags themselves. Since our last annual meeting one or two paper mills have entered into the manufacture of bags, with the result that the price of bags was reduced apparently below the selling price of the paper itself. The cutting in price of bag paper by some mills made it possible for other bag manufacturers to reduce their selling price, and so grounded in error was the judgment used that the result was the demoralization of both the bag and bag paper markets.

"This condition reached its most acute stage in the early summer months. Later on the demand for bag paper gradually improved, so that in the early fall there was a fair demand for it, and this condition existed up to the first of the present year. However, while the demand was very good on this grade of paper, I believe the market prices in many cases were down to the cost of manufacture.

LOW WATER HURTS PAPER MANUFACTURE.

"Conditions at the present time are in some respects better than they were a year ago this time, but we are still confronted with low water conditions,which prevail in many paper making districts. This in itself should be sufficient reason for not reducing prices, but I believe this condition, as had always been the case, is entirely lost sight of in the eagerness of some mills to secure a tonnage regardless of price.

"You are all aware of the abuses that exist in our trade conditions, and if we are to maintain a market price for our bag papers that will afford each of us a fair margin of profit, paying the same careful attention to quality that some of us have maintained in the past, it would appear that some of the causes of these abuses could be studied with considerable benefit, and our attention be directed to the elimination of such causes, and the improvement of such conditions as tend to foster this bitter competition which has prevailed in the past.

"It is greatly to be hoped that in the consideration of the several vital issues which are up for consideration at the present time, such as improved water power conditions, the reciprocity agreement, increased freight rates, etc., that we may not become panicky, but may work in harmony, and endeavor to maintain a uniform market price for our product.

"In conclusion I would draw the attention of the members to the reports of the production and consumption which are regularly furnished by this association. In these reports will be found a clear, impartial account of facts and conditions, and a careful study of the same should tend to eliminate price cutting and many of the errors which have occurred in the past."

CHEMICAL UNBLEACHED—TONS.

Country.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Tons.
Roumania	....	....	....	....	....	....	....	....	....	....	....	....	....
Austria-Hungary	961	544	590	477	310	418	446	494	272	803	1,408	535	7,258
Belgium	....	....	....	....	....	....	....	....	....	....	....	28	28
Denmark	....	....	....	....	....	....	....	....	....	1	....	....	1
France	....	....	....	....	....	....	....	....	....	193	....	....	193
Germany	7,600	7,009	4,327	4,745	2,331	3,493	5,929	5,045	4,877	4,979	3,357	4,633	58,325
Netherlands	....	....	....	....	....	....	....	....	....	....	....	....	....
Norway	2,474	2,792	2,713	3,254	2,260	3,625	1,867	1,695	1,762	2,092	3,616	2,580	30,730
Finland	....	....	....	....	....	....	255	595	304	645	601	390	2,790
Russia-Europe	1,270	625	674	639	457	715	1,022	487	541	195	59	283	6,967
Sweden	4,586	3,351	5,237	3,512	3,403	4,684	4,550	6,820	4,541	7,508	4,222	5,384	57,798
England	358	251	224	456	83	128	78	79	67	196	140	28	2,088
Canada	3,003	2,961	5,090	2,391	2,697	2,614	1,643	2,880	3,060	2,911	3,922	2,731	35,903
Totals	20,252	17,533	18,855	15,474	11,541	15,677	15,790	18,095	15,424	19,523	17,325	16,592	202,081

CHEMICAL BLEACHED—TONS.

Country.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Tons.
Roumania	....	....	....	....	....	....	11	....	....	....	....	....	....
Austria-Hungary	225	457	525	137	....	487	72	368	....	169	79	391	2,910
Belgium	97	....	....	....	....	....	....	....	....	....	....	....	97
Denmark	....	....	....	....	....	....	....	....	....	....	....	....	....
France	56	....	....	....	27	....	....	....	....	....	24	....	107
Germany	1,513	2,135	2,225	1,222	2,506	1,576	1,685	2,657	1,193	1,984	2,137	2,109	22,942
Netherlands	12	19	15	....	....	....	39	17	....	....	23	....	125
Norway	1,595	2,643	2,668	4,244	3,469	3,353	3,069	3,421	2,329	3,221	3,443	2,645	38,100
Finland	....	....	....	....	....	....	56	80	....	....	....	....	136
Russia—Europe	54	79	54	282	160	107	....	....	....	....	....	....	790
Sweden	237	97	392	1,156	487	192	237	296	152	387	162	1,148	4,943
England	197	....	....	....	112	....	....	....	....	....	....	....	309
Canada	600	602	1,364	337	620	555	616	383	281	223	248	547	6,376
Totals	4,586	6,032	9,243	7,150	7,221	6,445	5,945	7,329	3,955	5,984	6,116	6,840	76,846

Total Tons Bleached Imports..... 76,846 tons.

Report of the Chemical Pulp Division

The report of George M. McKee, member of the executive council, representing the Chemical Pulp Division, follows:

MR. PRESIDENT AND GENTLEMEN—The Chemical Pulp Division looks back on the year just closed as not a very successful year. We doubt if there is any concern which has obtained satisfactory results. It has been a poor year. Demand has been light and prices ruled low, and dissatisfaction generally among the manufacturers. We approach 1911 with no enthusiasm in regard to better conditions—that is, the immediate future.

SULPHITE MILLS RAN ONLY PART TIME.

Thirty-two sulphite mills, making unbleached sulphite, operating on an average of twenty-four days per month, marketed approximately 73 per cent. of their available tonnage. In other words, these thirty-two mills have available for the market about 198,000 tons of unbleached sulphite per year, and were able to ship only 144,163 tons. This is only a slight improvement over the conditions existing during 1909, when the mills shipped about 68 per cent. of their available tonnage.

The domestic manufacturers of chemical pulps find themselves in a very uncomfortable position, in being compelled to sell their commodity at practically cost prices, when the consumption of all grades of pulp in our country was greater than ever before, approximately 50,000 tons more sulphite being used in 1910 than during any other year in the history of the paper and pulp industry.

This embarrassment is brought about by the constant increase in the importation of European cellulose. It seems to be the only object of these foreign manufacturers to see how much pulp they can send to the United States and to enter into the keenest competition with each other to find out who can name the lowest prices.

It will be noted from the tables on page 25 that 202,081 tons of unbleached chemical pulp was imported, while, as stated before, only 144,153 tons was shipped by domestic manufacturers. Thus, it is readily seen that the control of the market is absolutely in the hands of the foreign manufacturers. They have it within their power to increase the price of pulp from $3 to $5 per ton, within the next sixty days, if they see fit to do so.

With reference to bleached sulphite, the demand throughout the year has been fair, with prices ruling much lower than a year ago, due to the strong competition of the importers of foreign bleached pulps.

The mills making bleached soda pulp have had a fairly active year, with weakened prices, in sympathy with the other pulps.

The report of the afternoon session follows:

AFTERNOON SESSION

Report of the Official Chemist

The annual report of the official chemist, Arthur D. Little, was read by F. E. Gallagher, of the Little Laboratory. It follows:

Last month in this city a group of engineers and electric railway men observed the twenty-fifth anniversary of the operation of the first electrically driven street car. The occasion serves to effectively bring to attention the wonderful electrical development that has followed this initial experiment in a short period. Commercial success of the electrical industry has been possible only because of rapid and brilliant engineering advances. The commercial situation presented unique opportunities which the engineers not only accepted, but prepared for in advance through the agency of preparatory technical education. The development of the electrical industries and that of engineering education have been strikingly co-ordinate; their successes have been mutually dependent and related. That an industry should have developed so extended and complete an educational system within such a short period is no less wonderful than the development of the industry itself.

A TECHNICAL SCHOOL GREATLY NEEDED.

The corresponding situation in the paper and pulp industry, in this country at least, is one of sharp contrast. Although its period of greatest expansion corresponds closely to that of the electrical arts, and its development has been quite as extensive, still there is existent in this country no school where the technology of pulp and paper making is satisfactorily taught. The need of specialized education is being recognized more and more in our industry because of the increasing complexity of our manufacturing processes and the necessity, imposed by competition, of operating along lines of high efficiency. There is required for this not only thorough intimacy with manufacturing practice, but also intelligent appreciation of the fundamental theory.

Many of the problems that are presented by the starting of a special school for paper making have been worked out for a closely allied industry by the Lowell Textile School. It now seems probable that some arrangement can be perfected whereby the proposed school of paper making can be established in connection with this existent organization, and the experience, material and intellectual resources of the latter made directly available.

During November representatives of this association visited the Lowell Textile School, inspected its extensive equipment and conferred with the officers upon the possibility of establishing a paper making department in connection with the institution. Since this committee will report separately to the association no attempt will be made in this report to describe the equipment, outline the curriculum or indicate the way in which the institution was made to so efficiently serve its present purpose. As indicating, however, the practicability of establishing a paper making branch, it may be pointed out that a large part of the present equipment of the school and the services of the instructing staff would be with little change directly available for the new work. For example, the administration offices, the class rooms and the laboratory are ample enough to permit of considerable expansion. It would, of course, be necessary to provide in complete form apparatus for the technology of pulp and paper making, and a suitable building for its accommodation. We believe that this association should consider the entire matter at this time with a view to empowering our president and a representative committee to enter into active negotiations with the trustees of the textile school to determine definitely on just what basis we can hope to proceed.

THE RESULTS OF RECENT RESEARCH.

It is fitting to turn from the discusion of education to that of research, for they are closely related. That there are many subjects of importance but little understood and many profitable fields now awaiting investigation most of us realize. We are, however, very likely to recognize the importance of problems that have a direct commercial bearing and quite overlook even the existence of the more purely scientific ones which may influence in great measure the advance of the industry.

Dr. Carl G. Schwalbe has recently written a suggestive and instructive paper in which he outlines many of the problems of the cellulose industry, some of very practical significance, others along more strictly scientific lines. He points out, for example, that in the production of mechanical pulp by the hot process the initial hot water treatment results in the production of a brown discoloration in the wood. The bleaching out of this color has not been successfully accomplished. The action has, however, been traced to a strictly chemical cause, oxidation, and it is through the prevention of oxidation, either by working under vacuum conditions or by the introduction of a reducing agent in the wood, that the remedy seems likely to be found.

Associated with this problem is that of utilizing the material extracted from the wood during the cooking process. Vanallin, the essential constituent of vanilla, could be recovered could it be done profitably at the present price of $4.50 per pound. These problems have a pretty direct commercial bearing. Among the problems which would have a more indirect value to the industry, but which are nevertheless important, is the determination of the differences in the cellulose obtained from different sources or in different ways from the same source. Is the cellulose obtained by

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Manufacturers of EUREKA (4 ply), PARAGON (3 ply) and RED CROSS (2 ply) Hose.

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It does not dry out or become hard and brittle, but retains its tough, elastic qualities, either in or out of service. It will not blow out under any pressure, and the joint can be broken numerous times without renewing the packing.

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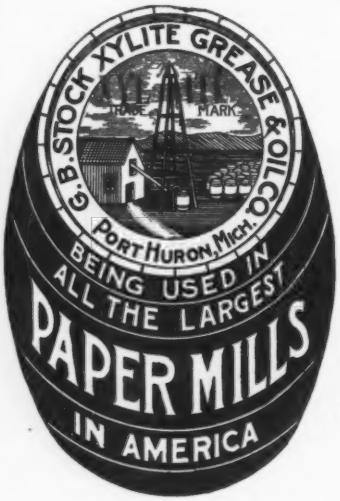

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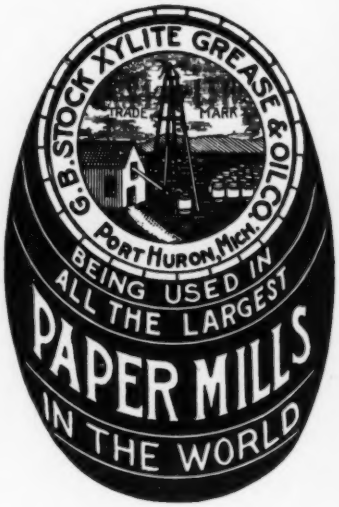

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Very truly yours,
PARSONS PULP & LUMBER COMPANY
W. T. ROBINSON,
General Manager

Dict. by WTR-g.

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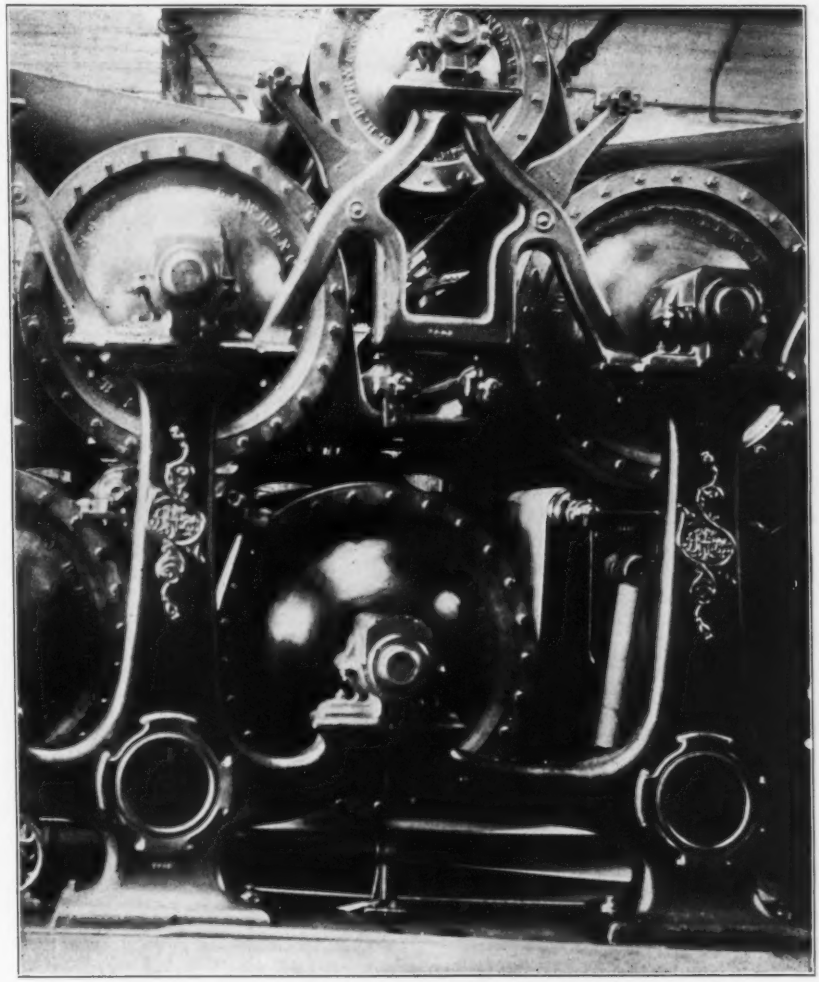

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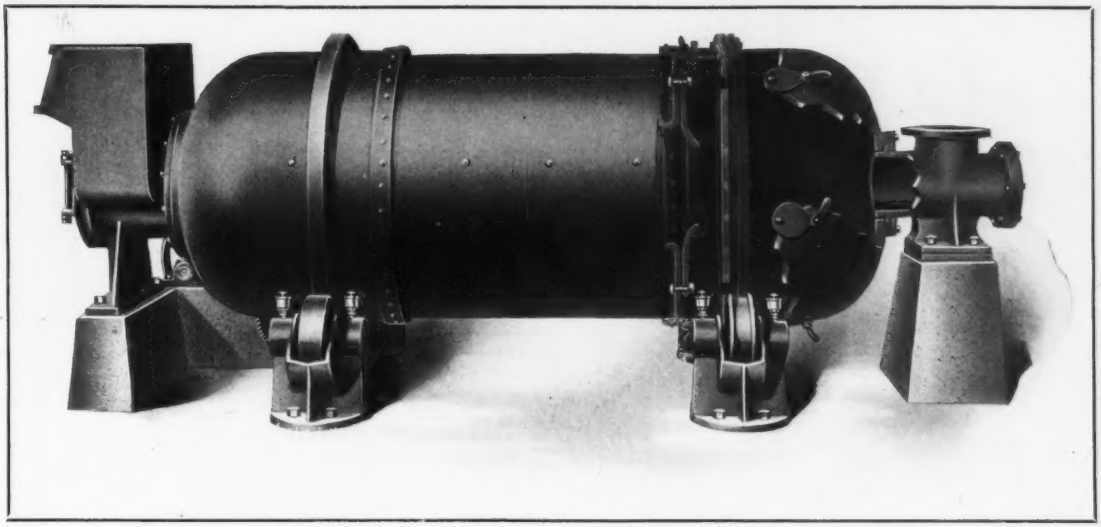

Stebbins Oxidizing Rotary Sulphur Burner

U. S. Letters Patent No. 906,574, dated December 15th, 1908.
U. S. Letters Patent No. 934,700, dated September 21st, 1909.

The number of these Burners now in use have a capacity for 72,000 tons of dry weight Sulphite per year, and their superiority is based on the principle and construction involved.

FURNISHED in 5 to 40 ton sizes, based on daily production of dry weight Sulphite Pulp.

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the soda process essentially or chemically different from that obtained from the same wood by the sulphite process? Physical differences are readily apparent, also the yield by the soda process is very considerably less than by the sulphite process. Is the cellulose that goes into solution different in any degree from that which remains?

After suggesting many other problems, Dr. Schwalbe concludes that "These considerations made it sufficiently clear that in the cellulose industry, and in its allied industries, in spite of the numerous isolated observations, the characteristics of cellulose or the celluloses are very imperfectly known from the chemical point of view. We do not even know the constitution of the cellulose of cotton, which may be taken as the type, and still less of its derivatives, the hydrocelluloses, cellulose hydrates and the oxycelluloses. We can only form a vague idea of these bodies. If the cellulose industry is to continue to progress it is absolutely necessary that a systematic study be made of all the bodies included in the above category. * * * Whether it be by purely chemical methods, or by physico-chemical methods, there is no doubt in any case that those who devote themselves, regardless of the labor, to such serious experimental researches, will have greatly accelerated the progress of the chemistry of cellulose, as well as that of pure science, and that the progress of the cellulose industry will likewise be facilitated."

A School Would Encourage Research.

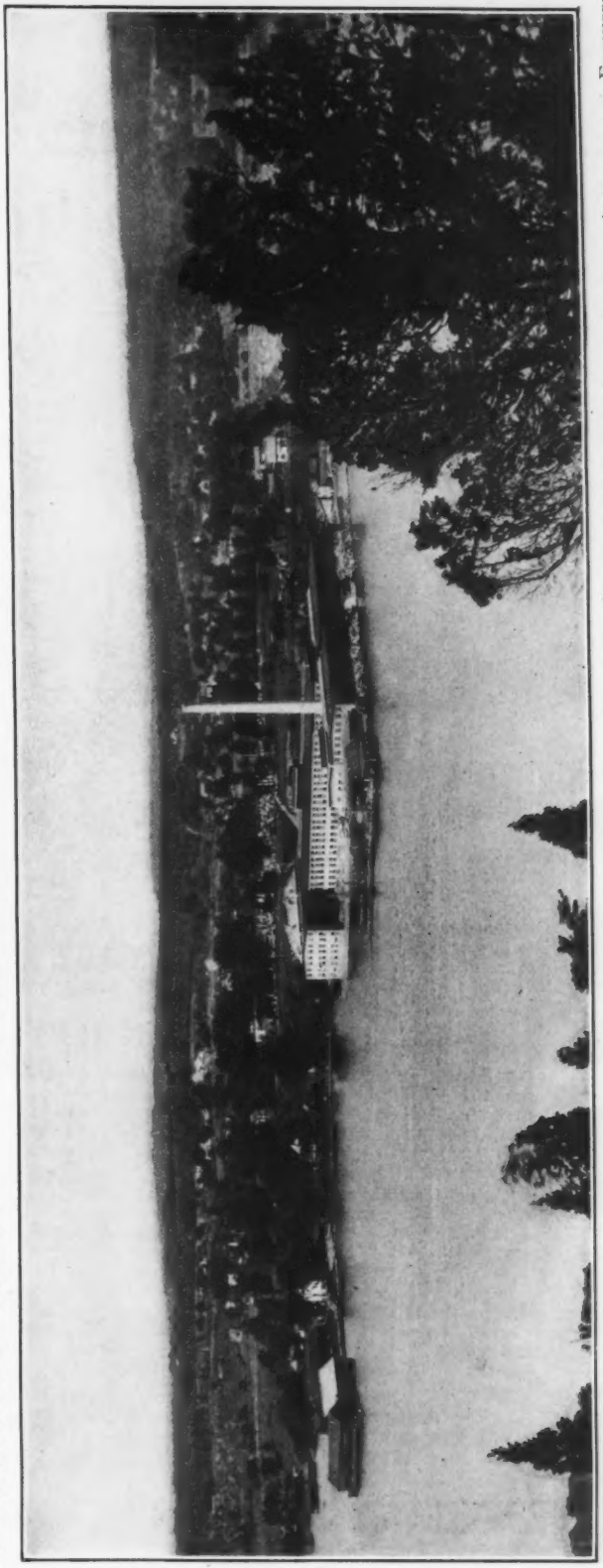
One of the indirect but far reaching results that should follow the foundation of a special school of paper technology would be the encouragement of research along these and similar lines. In such a school there should exist conditions favorable for the best endeavor as far as association, inspiration and facilities are concerned. The research of the mill investigator is liable to be directed along very practical and very narrow ilnes. The results, if valuable ones are obtained, are not likely to quickly appear for the enlightenment of the expectant world and of competitors. The detached scientific investigator, on the other hand, is likely to be so unappreciative of the practical side of the industry that he too works along narrow lines, and the value of his results may be greatly depreciated through lack of proper interpretation.

A research institution which should eventually accomplish much for the wood and pulp industries is the new, splendidly equipped forest products laboratory at the University of Wisconsin. The work and personnel of the institution are strictly under the control of the Forest Service, although the building was erected by the University of Wisconsin. The laboratory co-operates with the university along certain educational lines. The work of the laboratory is organized under the following heads:

Maintenance,	Wood Distillation,
Engineering,	Pulp and Paper,
Timber Tests,	Chemistry,
Wood Preservation,	Pathology.
Wood Technology,	

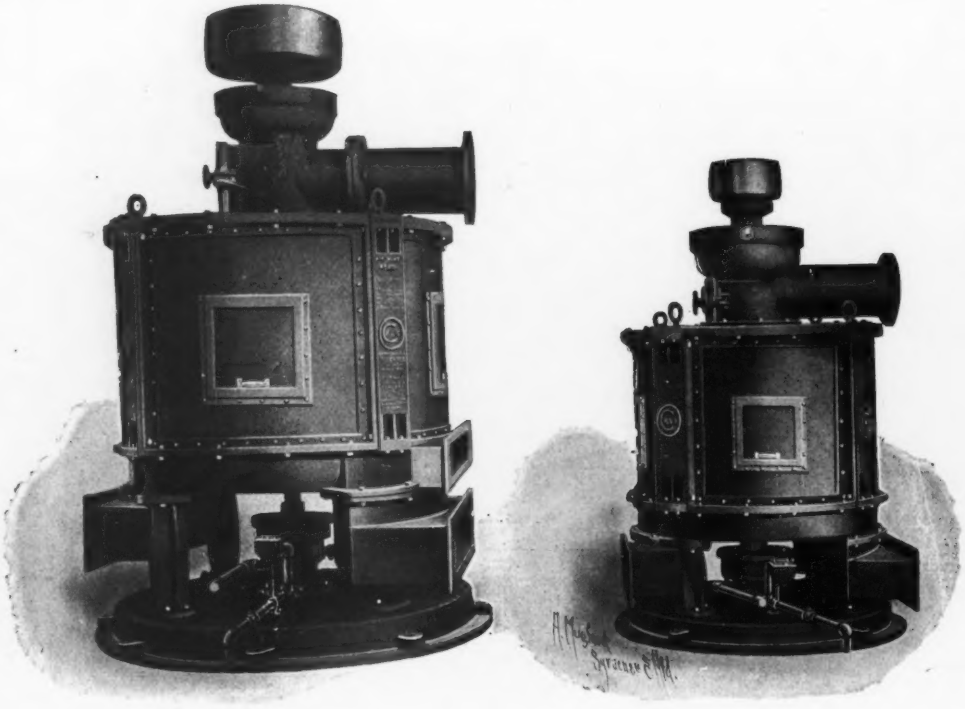
The pulp and paper laboratories are equipped with fairly large experimental sulphite and soda digesters, a 15 inch Fourdrinier machine and necessary paper and pulp making accessories. A separate laboratory for studying ground wood problems has been established by the service at Wausau, Wis. This is equipped with a commercial type of grinder, a barker, wet machine, etc.

The purpose of the laboratory has been clearly indicated by Director McGarvey Cline. "The possible value of the forest products laboratory to the lumbering and wood using industries will be readily recognized by all who are familiar with the problems confronting these industries. The actual value of the laboratory, however, depends upon its ability to obtain results of practical value. To secure such results to the best advantage it must have the support and co-operation of the men who are in constant and intimate association with commercial problems. The service, therefore, invites such men to share with it the re-



New Plant of the Thames River Specialties Company, Located on the Thames River at Montville, Conn.—George F. Hardy Was the Architect and Engineer.

The Centrifugal Screen



The above illustration is made from photograph taken of the two sizes of THE CENTRIFUGAL SCREEN, therefore shows proper relation in size. The small screen shown will compare quite favorably in capacity with any other so called rotary screen manufactured, the larger one has of course a proportionately greater capacity. Below we give some of the details of construction. *We are extremely anxious that interested parties compare the features we here refer to with similar features as found in any of the imitations of this machine.*

CONSTRUCTION

These machines have a cast iron base which supports the entire machine, making the same entirely self contained. The two outlets shown on the large machine are for the screened stock, insuring perfect freedom to its discharge from the machine. The runner of the screen has its lower bearing in a bronze lined water circulation step bearing casing, so constructed that the entire step arrangement, including the bronze bushing, is constantly submerged in oil. The step bearing is made from the best quality of steel in four pieces; a stationary square piece resting in recess made to receive it in the step casing, a permanent round piece in the end of the runner shaft having a tapered feathered member to enter the lower end of the shaft, and two steel discs between these two parts which are free to move as necessary.

We have two constructions of runner, the one for sulphite work being constructed with steel shaft which is thoroughly protected with bronze casing, a bronze hub, bronze sleeve which has the ports for regulating flow of stock to each wing, said ports having regulating gates of bronze. Top plate which seals the top off and holds upper end of all parts firmly together are of bronze, wings of copper. For soda and ground wood pulp mills, this runner is constructed with steel shaft, cast iron hub and sleeve, steel top plate and steel wings. In both constructions all parts are thoroughly riveted together.

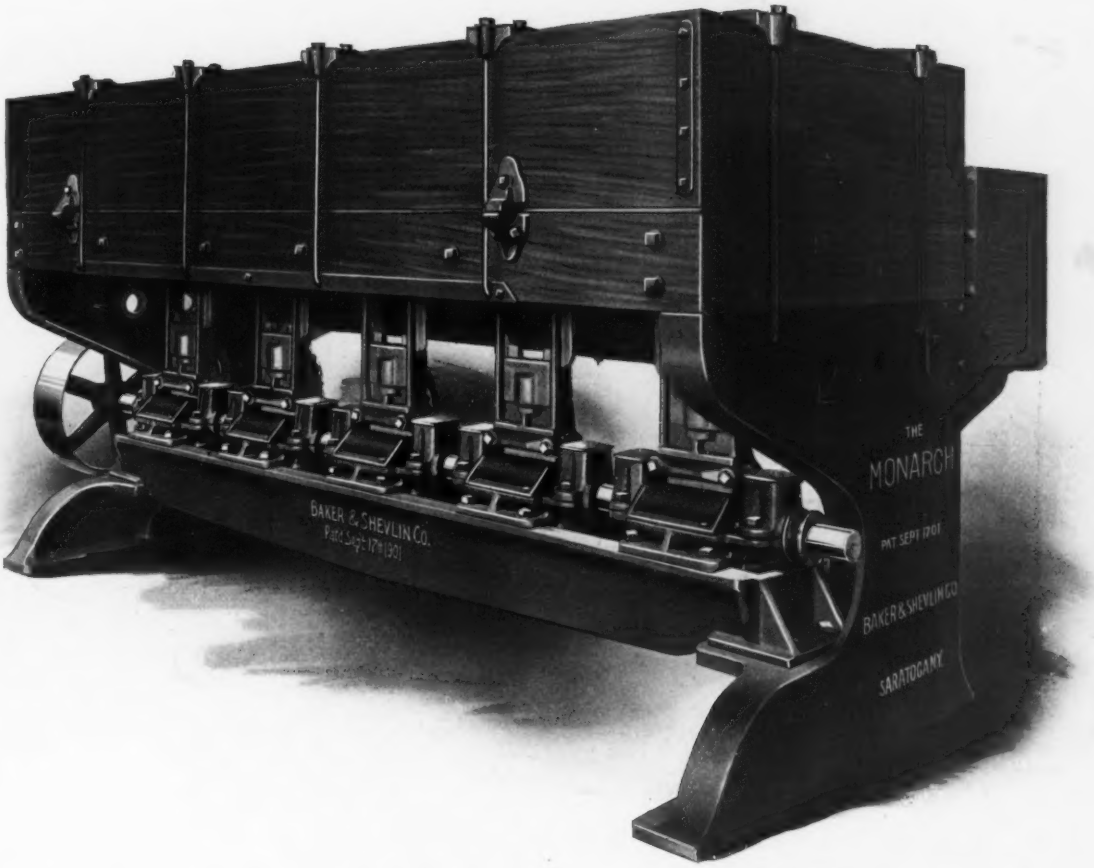
In all of these screens, the screen plates are held in position by four bronze plate holding frames, which are machined top and bottom, and jointed on the edges, where they come in contact with each other, making them absolutely tight all around. These plate holding frames are bolted with bronze bolts to each other, and to top and bottom frame of machine. They have heavy flanges all around their outer edges, and in addition to this longitudinal and vertical ribs, which intersect so that each 8½ inches of the plate surface has its supporting ribs. The screen plates, which are of copper, are securely riveted to these plate holding frames.

The upper bearing is of the equalizing type, lined with best babbitt metal, which insures the least possible friction.

We can refer interested parties to companies having these screens in use from a few months to ten years. We own all patents on this screen, and are the exclusive manufacturers, except that we have them built in Canada for Canadian trade.

BAKER & SHEVLIN CO., Saratoga Springs, N. Y., U. S. A.

The Monarch Diaphragm Screen



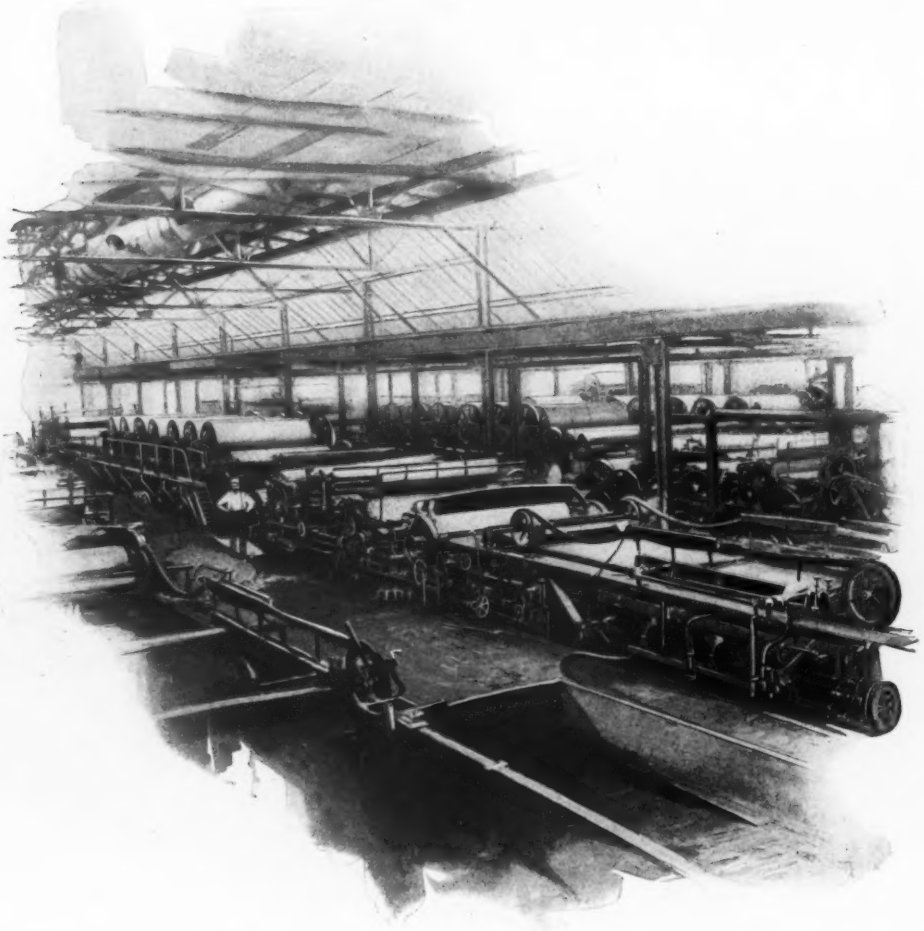
The above illustration is of the TEN plate size MONARCH OPEN SIDE TYPE DIAPHRAGM SCREEN, which is made in sizes for SIX, EIGHT, TEN, TWELVE and FOURTEEN plates, 12 inches by either 40 inches, 42 inches or 43 inches long. It will be noticed that this construction gives all the advantages of the OPEN SIDE TYPE, permitting removing sideways of the shaft, this requiring removing only of the bearing caps and shoes, and besides this advantage it has the well known advantages of the superior MONARCH DIAPHRAGM *operating and controlling mechanism*, which is the simplest and at the same time strongest and most efficient DIAPHRAGM controlling mechanism manufactured. We give option on this screen in construction of either cold rolled shaft with cams keyed on or with a solid forged steel shaft, of which the cams are an integral part, which insures entire absence of trouble of cams coming loose; also supplied with either hard maple or hard fibre shoes. We are sole manufacturers of this screen, as well as the following machines and specialties:

SHORTT PATENT COMBINED CLIPPER AND CRUSHER
C. BACHE-WIIG BARKING DRUM.
BAKER & SHEVLIN CO. WORM WASHER, WORM KNOTTER AND SLIVER SCREEN,
BAKER & SHEVLIN CO. PATENT SPLIT WINDER SHAFT,
RAMSEY PATENT GRINDER VALVE,
BUTTERFIELD IMPROVED BARKER ATTACHMENT,

as well as a general line of VALVES, PIPE and FITTINGS in either acid resisting bronze, lead or white metal, for sulphite mill process. Also manufacture many other articles used in paper and pulp mills.

BAKER & SHELVIN CO., Saratoga Springs, N. Y., U. S. A.

The Tyler Fourdrinier Wires



The word "TYLER" means quality wherever it is used in connection with woven wire products.

This is especially true in Fourdrinier Wires where the fabric is delicate and needs the strength of the best quality of wire and construction.

Take it year in and year out, the Tyler wires will show the greatest average life and produce the largest average in tonnage of paper.

A large stock of the Tyler Cylinder Faces and Washer Wires in the standard meshes and widths is carried in readiness for quick shipments.

The word "TYLER" means quality in all grades of Double Crimped Wire Cloth which can be supplied in any mesh from Iron, Steel, Brass, Copper and Phosphor Bronze wire.

Write Department "M" for a complete catalogue of Tyler Woven Wire products.

The W. S. Tyler Company

Cleveland, Ohio

sponsibility of making the forest products laboratory play an important and useful part in reclaiming the wastes of the forest and in increasing efficiency in the commercial use of wood."

Richmond's Work on Bamboo.

Along the line of the development and utilization of new fibre materials the continued work of Richmond on bamboo, the results of which have recently been published in the Philippine Journal of Science, deserves attention. The conditions under which bamboo can be utilized have been more closely determined. The sulphite process is not well adapted to bamboo because of the poor color of the pulp and the difficulty of bleaching. The treatment of two year old bamboo by the soda process gives every indication of being commercially feasible, judging from the calculations and estimates given by Richmond. The finished cost of the soda pulp at Manila is given as $21 per ton. The fibre has good length, strength and felting qualities and can be successfully mixed with other fibres.

Mr. Raitt in a private communication to Mr. Little tells of the continuation of his work in India with bamboo and of new investigations made on Indian wood. The continuation of the investigations of bamboo have been along the lines of determining the most suitable varieties for paper purposes, and the influence of age on the ease of treatment and the quality of the product. Good pulp has been prepared from Indian coniferous woods, although the investigations along this line have not progressed far enough to warrant detailed consideration.

Theory of Sulphite Process and Control.

Investigators have indicated considerable interest during the past year in the theory of the sulphite process and methods for its control. Peter Classen has described in the Wochenblatt experiments which indicate that the calcium in the cooking liquor should bear a definite relation to the lignin in the wood if satisfactory cooking results are to be obtained. There apparently takes place a quantitative combination between the calcium and the lignin. Interesting also are his experiments on the reversable reaction describing the changes of sulphur dioxide into sulphur trioxide and sulphur at different temperatures. Numerous experiments were made to show the changes in sulphite liquors when heated in sealed tubes with sulphur at different temperatures. Paul Klemm explains the formation of a red coloration in sulphite pulp during storage by the oxidation of the coloring matter that had previously been reduced and rendered colorless by the sulphite cook.

The Problem of Disposal of Waste Liquors.

The problem of the disposal of waste liquors from paper and pulp mills has received much attention during the past year. This is due to restrictive water legislation and indications that regulations governing stream control are to be more widely adopted; and also to the possibility of recovering materials of value from the mill wastes. Restrictive laws are in operation in Germany, and it is here that most of the investigation in this field has been carried out. The present status of the disposal of sulphite liquor in Germany has been very ably described by Dr. A. Pritzkow. In connection with sulphite plants his discusion covers: (1) digester liquor and wash water; (2) screen and filter press water from the pulp presses, and (3) condenser water and other water discharged in the operation of the machiney. One of the most troublesome factors entering into the running of waste sulphite liquor into waterways is the development of algae; the decomposing algae give rise to objectionable conditions and may become a menace to health. For the prevention of algae growth it has been proposed to store the liquors and discharge them into the stream at intervals in large volume. The wave action and force of the current are relied upon to prevent the growth of algae. Other schemes deal with the treatment of the liquor by natural and artificial bacterial processes, the discharge into sink holes and evaporation. The evaporation of the liquors and the combustion of the solid material appear to be prohibitive on account of cost, which in one case amounted to 82 cents per 1,000 gallons. There are several systems which involve the recovery of by-products, such as sulphur, fuel, pitch for briquetting, cattle food, dust preventive, fertilizing, tanning material and dyestuffs. Up to the present time none of these methods can be considered to have reached the stage of commercial feasibility, although the results obtained in some cases indicate that the solution of the problem may lie along some of these lines. One or two reports have been published to the effect that alcohol has been successfully made from waste sulphite liquor on a commercial basis in Sweden, where the product is not subject to taxation. One mill is said to be producing 600,000 liters of alcohol a year, which is equivalent to one-half of the present demand in Sweden. We also understand that one concern in this country has carried on extensive work along this line.

Sulphite and Pulp Mill of Menasha Paper Company, Near Ladysmith, Wis.

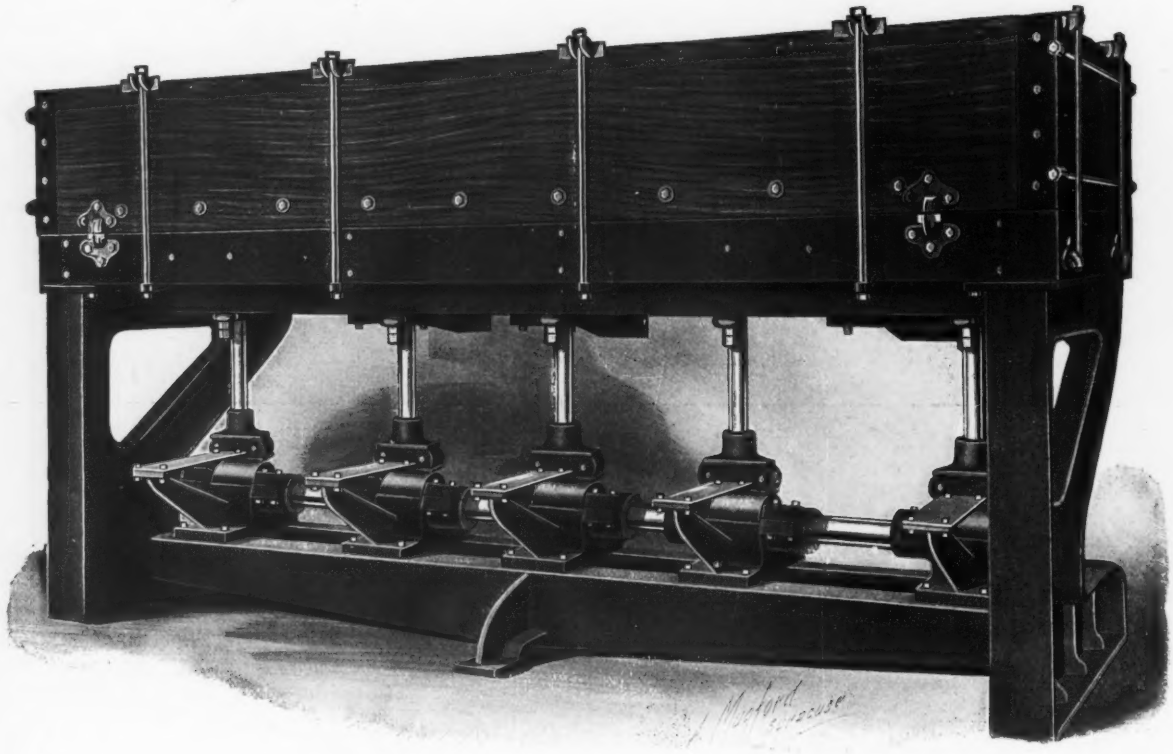
Temperature in Determining Moisture in Pulp.

There was in Germany for several years a rather heated controversy over the most desirable temperature to use in determining the moisture in pulp. Many believed that the pulp should be dried at about 90 degrees C., or below the boiling point of water; others advocated a temperature of 100 to 105; and still others believed that a temperature of 120 would be permissible. Herzberg and Rudeloff published the results of an extensive investigation which would

We want you to have the Screen which you ought to have in order to get full value, or any value at all out of your money

The Harmon High Grade Diaphragm Screen

FLAT TYPE



SPECIAL FEATURES

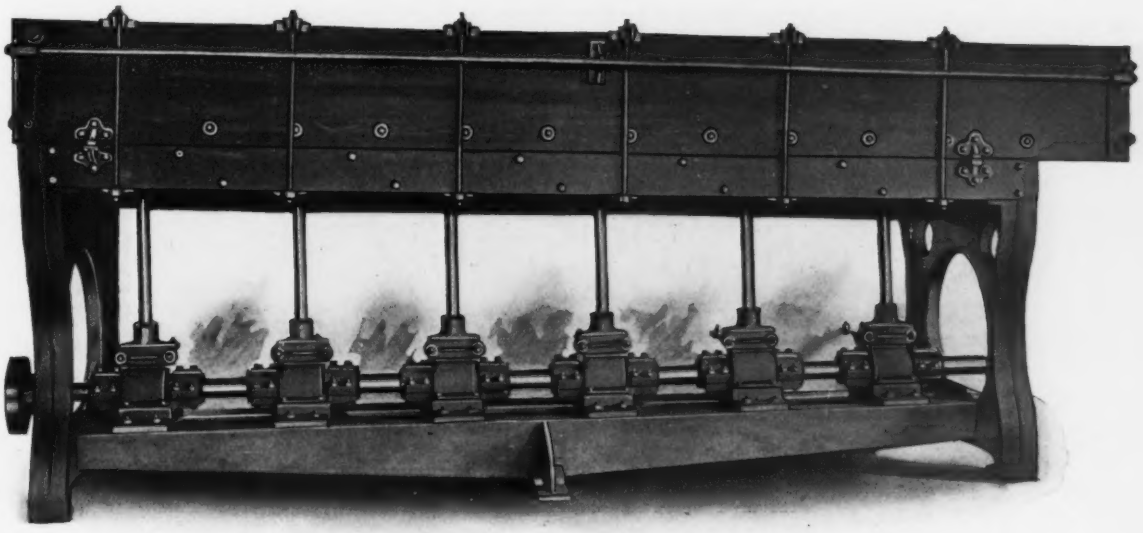
Chilled Cams (actually chilled, not pickled), Iron Shoes. Speed 125 R. P. M. (40 per cent. slower than any other). At the above speed iron shoes are no noisier than wooden shoes. You can appreciate the wearing qualities of the two

THE HARMON MACHINE CO.

Quality is everything, and success is in everything that stands the quality test.

The Harmon High Grade Diaphragm Screen

INCLINED TYPE



SPECIAL FEATURES

Every joint machined. Reinforced Bellows Frame. Top equipped with Truss Rods. Self Cleaning. Discharge Openings eliminating all trouble with slime. Strong where strength is required.

WATERTOWN, N. Y., U. S. A.

LINDSAY

Fourdrinier Wires

PEERLESS IN
SERVICE AND
PRODUCTION

ANY SIZE UP TO
186 INCHES IN WIDTH

CYLINDER COVERS

Extra firm and uniform

ALL SIZES

The Lindsay Wire Weaving Co.

CLEVELAND, OHIO

(Collinwood Station)

seem to effectively dispose of the whole question. It was found that there were very little differences in the results obtained at any of the three temperatures, and they finally recommended the use of 105 degrees, which is in accordance with ordinary practice in this country.

A Clever Paper Testing Machine.

A clever paper testing machine, the Eddy Tester, made by Dobler & Mudge, of Baltimore, has lately appeared. This is a portable instrument for testing the bursting strength of paper and accomplishes a result very similar to the Mullen Tester.

"The Chemistry of Cellulose."

Notable among the books that have appeared during the year is that by Carl G. Schwalbe on "The Chemistry of Cellulose." This work is unquestionably the best that has so far been published on the subject. It is largely bibliographic in text, and its construction and method of handling are excellent. There has so far appeared but the first volume, which deals largely with the chemistry of cotton cellulose. The second volume, which is to be published soon, will be devoted largely to the testers of cellulose.

The Forest Service Ground Wood Laboratory

H. Stanley Bristol, assistant directer Forest Products Laboratory, Madison, Wis., then read the following paper on the work of the Forest Service Ground Wood Laboratory at Wausau, Wis.:

Mr. Chairman and Gentlemen of the Association—It is only necessary to look at the figures issued by the Census Office to ascertain these facts: That fully 90 per cent. of the wood used in this country for the manufacture of ground wood is spruce, one-third of which is imported from Canada; that these imports have been gradually increasing for a number of years, and that the ratio of the imported spruce consumed to domestic spruce has also been on the increase.

The meaning of this does not have to be explained to those familiar with the pulp and paper industry, and none understand more clearly than the manufacturers of news paper what the ultimate end will be if this state of affairs continues. Under present commercial conditions the news print industry is absolutely dependent upon ground wood. Ground wood means spruce and water power, and Canada has the advantage of us in both.

The final result of continuing under present conditions is plain, and has been pointed out again and again, viz., our ground wood industry will be transferred across the border line.

How to Retain the Industry Here?

Repeatedly the question has been asked: "What can we do to retain this great industry within our boundaries?" And as often the answer comes back: "*Make ground wood, if possible, from other woods.*"

This gentlemen, if the chief justification for the existence of the Forest Service Ground Wood Laboratory at Wausau, Wis.

Let me state briefly its origin: In the spring of 1908 George F. Steele, vice president of the Nekoosa-Edwards Paper Company, at Port Edwards, Wis., became interested in the subject, and visited at Washington, D. C., Hon. James A. Mann, Representative in Congress from the State of Illinois. The two gentlemen talked the matter over, agreed as to the advisability of experimenting with various woods by the ground wood process, and subsequently proposed to Gifford Pinchot, then Chief Forester, that the Forest Service undertake the work, assuring him of the necessary funds and co-operation of the trade. At a meeting of the Western branch of the American Paper and Pulp Association at Chicago in November, 1909, it was voted to donate the necessary pulp machinery for a commercial unit of a ground wood mill, including grinder, wet machine, screens, pumps, etc., but excluding all electrical equipment. At this meeting it was also voted to donate the wood for the test runs, and to appoint a committee of practical men on whom the Forest Service representatives could call for assistance and advice.

Largely through the endeavors of Messrs. Mann and Steele Congress was influenced to pass a special appropriation bill providing $30,000 for the project, experimental plant and for carrying on the experiments. The work of establishing the experimental station and directing its operations was assigned to that part of the service known as the Forest Products Laboratory at Madison, Wis.

F. J. Sensenbrenner, chairman of the Western branch of the association, appointed the following committee, it being anticipated by all concerned that the laboratory would be located at Appleton, Wis.

Peter R. Thom, Kimberly & Clark Company, Appleton, Wis.; W. A. Fannon, Interlake Pulp and Paper Company, Appleton, ton, Wis.; Peter McNaughton, Patten Paper Company, Appleton, Wis.; C. W. Stribley, Thilmany Pulp and Paper Company, Kaukauna, Wis.; Luther Lindauer, Lindauer Pulp Company, Kaukauna, Wis.

This committee furnished some good advice in the first stages of the work. After a careful canvass of all conveniently available sites, however, it was decided best to locate the station at Wausau, Wis., and forthwith the old committee was abolished and the present one appointed, consisting of:

G. F. Steele, Nekoosa-Edwards Paper Company, Port Edwards, Wis.; W. L. Edmonds, Wausau Paper Mills, Brokaw, Wis.; D C. Everest, Marathon Paper Mills Company, Wausau, Wis.; Anson M. Pride, Tomahawk Pulp and Paper Company, Tomahawk, Wis.; William Eibel, Rhinelander Paper Company, Rhinelander, Wis.

The particular site chosen was a plot of the ground located on Plummer Island, about 200 yards from the electric power plant of the Wausau Street Railway Company, from which electric power is secured for driving all of the various machines. Here an abundance of yard and pond storage for wood and pulp was available, and here the above company erected a suitable brick and stone building 40 feet wide by 100 feet long, provided with concrete floors throughout, and leased it to the service on reasonable terms. The city of Wausau was persuaded to donate the necessary water service.

Ground was broken about September 1, 1910, and the building was in shape by October 18, so that machinery could be installed.

Hastings Influences Donations of Machinery.

Largely through the efforts of A. C. Hastings, president of the association, donations of the following machinery were secured.

One 3 pocket International wood pulp grinder from the Friction Pulley and Machine Works, Hudson Falls, N. Y.

One 3 roll wet machine from the Improved Paper Machinery Company, Nashua, N. H.

One barking machine from the Green Bay Foundry and Machinery Company, Green Bay, Wis.

One 12 plate diaphragm screen from the Harmon Machine Company, Watertown, N. Y.

One set screen plates from the Union Screen Plate Company, Fitchburg, Mass.

Two Triplex pressure pumps from the Goulds Manufacturing Company, Seneca Falls, N. Y.

Two centrifugal pumps from the Goulds Manufacturing Company, Seneca Falls, N. Y.

One wet machine felt from the Albany Felt Company, Albany, N. Y.

One wet machine felt from the Appleton Woolen Mills, Appleton, Wis.

One pulp stone from the Manufacturers Paper Company, New York city.

One wooden tank from the Valley Iron Works, Appleton, Wis.

One set barker knives from the Dowd Knife Works, Beloit, Wis.

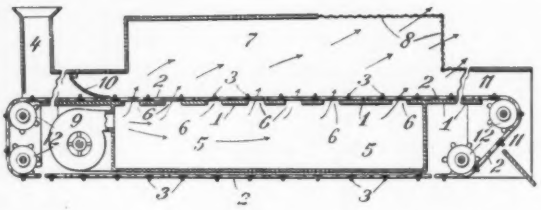
One Fairbanks scales from Paper, Inc., New York city.

Two Ashton relief valves from Paper, Inc., New York city.

Two trucks from W. A. Lounsberry & Co., Kalamazoo, Mich.

The Tompkins Process of

Cleaning Old Paper Stock



An automatic and continuous process of eliminating metal or other substances which injure or obstruct pulping or refining engines subsequently used for repulping old papers.

It is preferable to first pass the old paper stock through any ordinary duster or thresher, thereby reducing it to an advantageously uniform fragmentary condition.

The stock being moved forward over the conveyer floor is met or intercepted by air blasts from the blower **9** passing upwardly through the conveyer floor openings **6,** and thereby the forwardly advancing paper stock pieces or fragments are lifted from the conveyer floor **1** and are shaken and fluttered, and are, when thus air supported, prevented from falling through the waste material openings **6.** This lifting and upward and forward fluttering of the air-supported paper stock fragments causes bits of metal or other heavy substances to be shaken from the advancing stock and to fall by gravity directly through the air blast openings **6.**

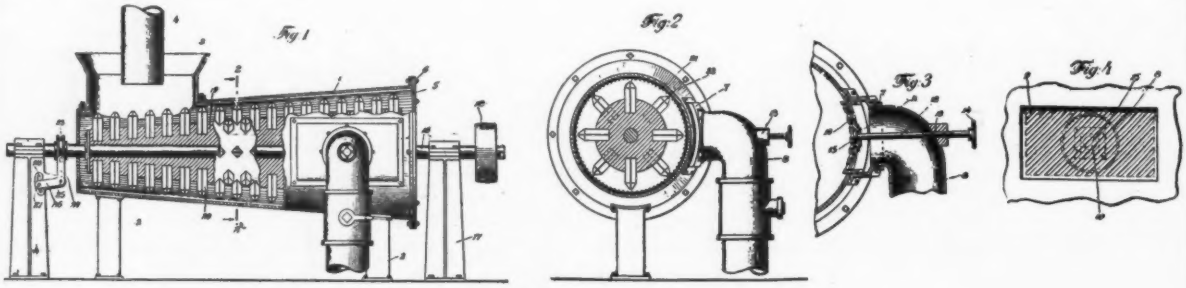
It may be possible to practice this improved process in one or more of its stages by using apparatus other than that herein described; hence there is no limitation to any particular style of apparatus by using which the invention may be practically and advantageously carried out.

The Tompkins

Rough Rulping Engine

The invention relates especially to an improvement in an apparatus for economically repulping old newspapers and other kinds of old papers in such a manner as to produce a paper product of **high quality at lower cost** than has heretofore been possible.

The accompanying cuts, like most patent drawings, crudely show the principle involved and are not intended to represent the mechanical construction in full.



PATENTED SEPTEMBER 13, 1910

The apparatus is of such a character that it is adapted to loosen the fibres effectively, if previously soaked and put the stock in **pumpable condition** without destroying the same or breaking the individual fibres.

In the cuts, **1** is an ordinary stationary, Jordan-filled drum supported upon uprights in the usual manner.

The smaller end of the drum **1** is provided with a large **detachable** inlet feed-hopper **3.** The outlet **7** is adapted to be closed by a **grating 9** having a plurality of **diagonally** arranged bars **10** therein as shown in Fig. **4.**

The knives **21** are adapted to co-operate with the arms **20** in disintegrating the paper stock as shown in Fig. **2.**

In the operation of the device, the paper stock, having been previously submitted to a thorough preliminary dusting, cleaning and soaking treatment, in process similar to one described in patent No. 910,881, issued January 26, 1909, is fed into the drum **1** through the hopper **3** with a quantity of water. The parts are arranged in such a manner as to avoid breaking of the individual fibres as the separation is accomplished without resorting to any grinding of the same. The stock is gradually worked from the smaller end to the larger end of drum **1** and when sufficiently pulped, passes through the grating **9** and out through the outlet pipe **8** in pumpable condition, to be further refined or treated as desired.

Capacity, on previously well soaked stock, from 2000 to 3000 lbs. per hour.

For additional information regarding above, address **JOHN D. TOMPKINS, VALATIE, N. Y.**

EDWARD A. JONES, PRESIDENT AND TREASURER WALLACE E. BARDWELL, SECRETARY

E. D. JONES & SONS CO.

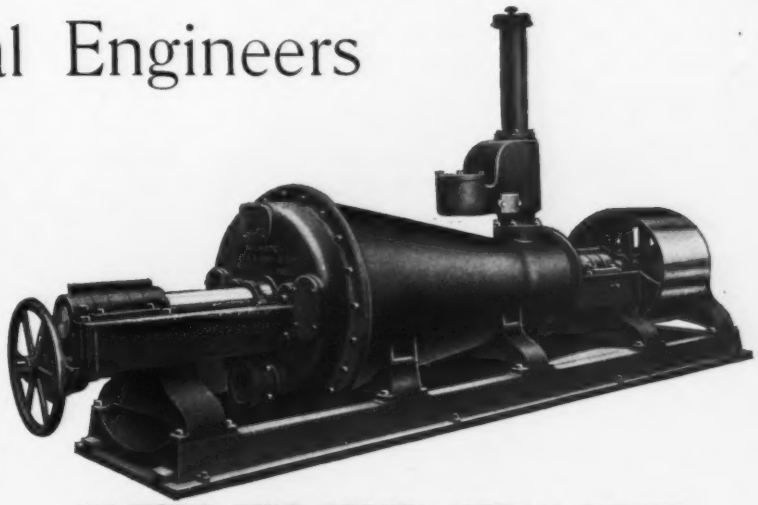
PITTSFIELD, MASS.

MANUFACTURERS OF

Paper Mill Machinery

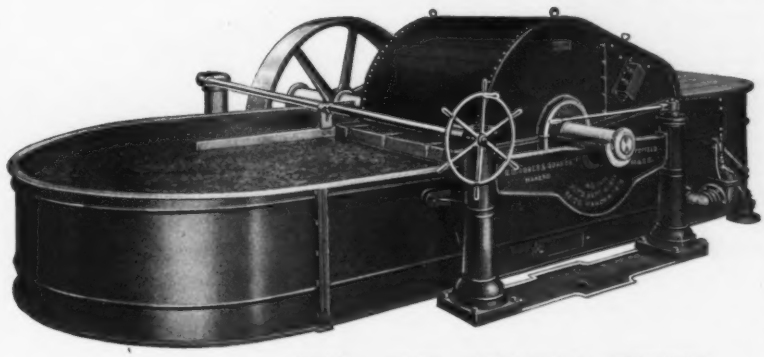
Mechanical Engineers

WE ARE THE SOLE MANUFACTURERS OF MACHINERY COVERED BY THE WAGG PATENTS and THE WARNER PATENT METAL AND SAND CATCHER FOR BEATING, WASHING AND COOKING ENGINES.



MAJESTIC BELT DRIVEN JORDAN ENGINE

Jordans made in three sizes.



IRON TUB BEATING ENGINE

We are manufacturers of three sizes of Jordan Engines, either Belt or Direct Connected Motor Driven. Fillings of the Wagg Steel Sextuple, Triplex, Duplex or Stone Type, Three-part or Plain.

Beating, Washing, Mixing and Bleaching Engines with tubs of cast iron or wood, and Cooking Engines with tubs of cast iron.

A wide variety of Dusting Machinery for all kind of raw materials.

Stuff Chests of both the Vertical and Horizontal Types.

Patented Wooden Sectional Suction Box Covers.

Rotary Pumps.

Transmission Machinery.

JORDAN FILLINGS, Three-part, Plain, **Wagg** Sextuple, Triplex, Duplex or Stone.

BEATER BARS, Solid Steel, or Forged.

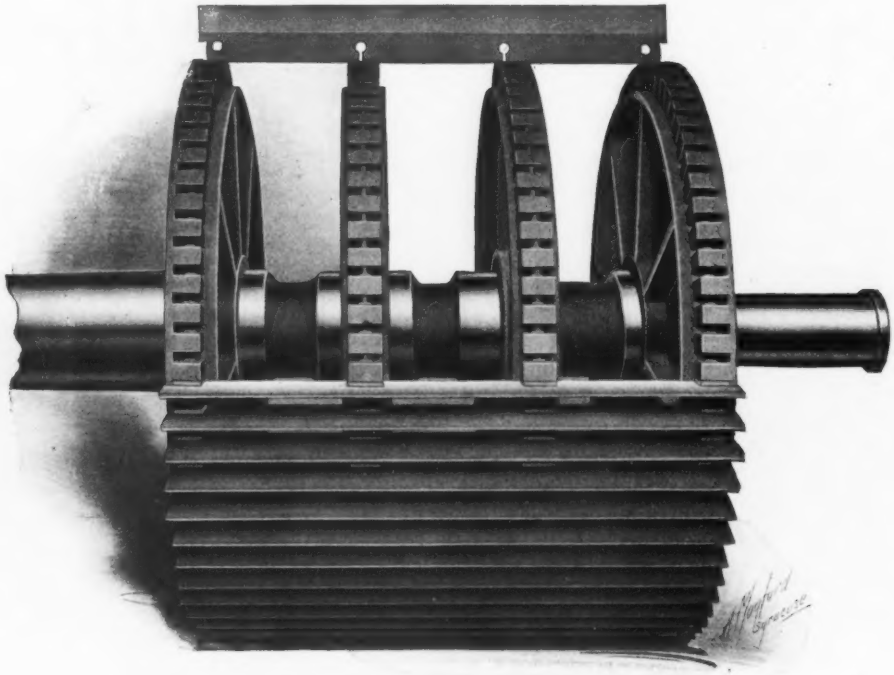
BED PLATES, Sheet Steel with Wood Fillings, Sheet Steel with Adjustable Iron Fillings, Solid Steel, **Wagg** Stone.

PATENTED WOODEN SECTIONAL SUCTION BOX COVERS

DILTS MACHINE WORKS

FULTON, N. Y., U. S. A.

Beating and Washing Engines, Wet Machines, Etc.



BANDLESS BEATER ROLL

THIS Roll is one of the several improved features in Beating Engine construction that we have to offer to the user of hard stock. Over 100 of them now in successful operation.

ALSO MANUFACTURERS OF

PULP GRINDERS — BUNDLE CUTTERS
CYLINDER MOLDS — WOOD or IRON PRESS ROLLS
COUCH ROLLS and FELT ROLLS — FLY BARS, BED PLATES, Etc.
HORIZONTAL and VERTICAL STUFF CHESTS

In addition the association purchased:

One swing cut-off saw.

The total value of the equipment secured through the association up to the present writing is approximately $7,500.

THE COST OF THE OTHER EQUIPMENT.

To operate the above machinery and accurately control and examine the raw materials and products used in the tests the service has purchased about $21,000 worth of equipment as follows:

One motor generator set consisting of one 400 kw., 550 v., d. c. generator, direct connected to and mounted on the same base with a 460 kw. sized synchronous motor 2,300 v., 60 cycles, 3 phase a. c., 500 r. p. m., and a 20 kw., 125 v. exciter.

One 500 h. p., 550 v., d. c. variable speed motor, direct connected to the grinder shaft.

An elaborate switchboard provided with accurate devices for controlling various machines and measuring power consumption.

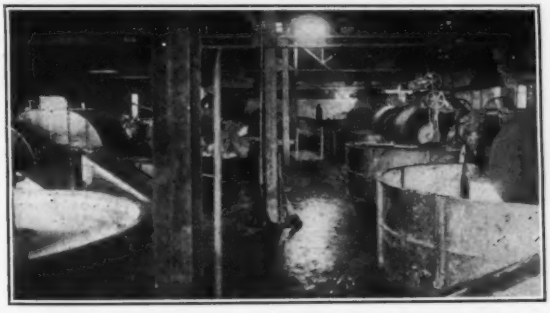
Individual 500 v., d. c. motors for driving all pulp machinery other than the grinder.

Complete accessory outfit for testing the ground wood and finished pulp, including stereopticon lantern for projection of fibre images onto a screen for examination, drying ovens for moisture determinations, balances for weighing samples, etc.

The grinder is provided with a pressure gauge and dial at each cylinder for indicating the hydraulic pressure and movement of the pressure feet. A Bristol recording thermometer is also provided for recording the temperature of the grinder pit during the grinding process.

The motor generator set receives the 2,300 v., 3 phase a. c. from the power house of the Wausau Street Railway Company and converts it into 550 v., d. c. for use in the 500 h. p. grinder motor. Both the motor generator set and large d. c. motor are capable of 50 per cent. overload for two hours without excessive heating, and are connected up and operated on the Ward Leonard method of speed control, so that any desired conditions of speed and power can be obtained between 225 h. p. at 100 r. p. m. and 750 h. p. at 300 r. p. m.

This gives a very flexible system, and while it is not expected at once to tax the machines to their full horse power capacity, or to try to run the present quarried stone at 300 r. p. m., it is believed a wise precaution was made in not limiting the facilities for experimentation, especially as the installation will probably be used for some time to come, and possibly experiments will be performed on artificial pulp stones which give promise of being



BEATER ROOM, ALTON (ILL.) BOX BOARD AND PAPER COMPANY.

able to withstand higher speeds than the stones at present used.

I desire to express here my appreciation of the good work of my assistant, J. H. Thickens, who has superintended the installation of the machinery and is now in immediate charge of the operation of the Wausau plant. The experiments of the laboratory began in earnest about January 1, 1911. The program as outlined calls for testing first of all those woods of which there is a reasonably large supply in the vicinity of the ground wood mills most needing assistance. Jack pine and hemlock are to be given first attention. Let me impress upon you, however, that this laboratory is not a local one, but a national affair, and it is the intention to subsequently test a wide variety of woods secured from various parts of the country. Up to the present time the studies have

THE GENERATOR ROOM—LYBSTER MILL OF THE LINCOLN PAPER MILLS COMPANY.

been confined entirely to jack pine (*pinus divaricata*), and the experiments have been more qualitative than quantitative.

A definite working plan was prepared, giving detailed instructions for carrying on the work, and submitted to the advisory committee for criticisms.

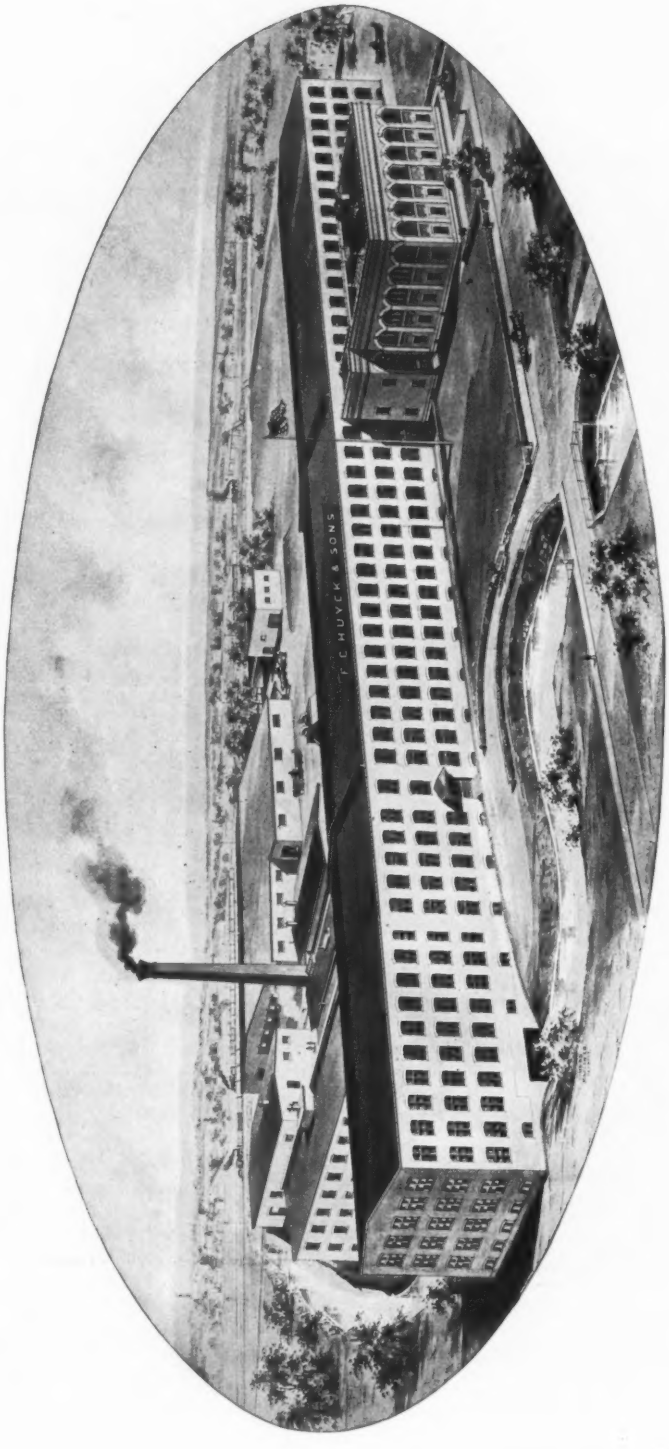
THE METHOD OF MAKING THE TESTS.

Speaking broadly, the method of attack on practically all problems of this character consists essentially in making short test runs varying one at a time the fundamental conditions of manufacture; such as, surface of stone, peripheral speed of stone, pressure on grinder cylinders, temperature of grinding, moisture condition of wood, etc., and in studying the effect of variations in these upon such important features as the yield, rate of production, quality of product and horse power consumption per ton.

The plan further provides for submitting samples of the product to the advisory committee for inspection as well as to the Forest Products Laboratory at Madison, Wis., for scientific examination and comparison with standards produced from samples of commercial ground wood collected from widely different sources. Five hundred to 1,000 pound batches of ground pulp are also sent from time to time to the Madison laboratory to be run out in the form of paper on the miniature Pusey & Jones Fourdrinier paper machine. Subsequently longer runs will be made under the conditions found to be most favorable, and a sufficient quantity of products made which will be sent to different commercial plants and run out on some of the large paper machines in the form of different kinds of paper.

The laboratory has been in operation such a short time that it would be premature at present to say very much about results. This can be said, however, that we have already produced an all jack pine sheet of news consisting of 80 per cent. ground wood and 20 per cent. sulphite fibre, and, further, that in producing this article the pitch in the wood has given us practically no trouble. I have brought with me for your examination several different samples of news paper made from jack pine ground wood mixed with sulphite fibre made from spruce, hemlock and jack pine; also some of the ground wood from which these papers were made. In criticising these please bear in mind that they are the first three runs of news paper which we have made on our paper machine and could undoubtedly have been improved if we had had more experience with the handling of our apparatus and the small quantities of pulp which we necessarily have to use. Any suggestions which you can make, however, will be much appreciated.

One thing further to which your attention is invited. It has been absolutely necessary in order to ascertain the progress made in this work to make comparisons with commercial samples ordinarily produced in the trade. To do this properly it was believed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desirable to secure, if possible, from every ground wood mill in the country a sample of its product together with certain data on the manufacturing conditions. It was the intention to arrange these samples according to character of fibre, dirt, shives and color into a number of different classes, and in this manner secure a set of standards which could be used to check up the results of the Wausau plant.

Labeled bottles in mailing cases and provided with Government franks were sent out to 136 concerns, and out of this number replies were received from only fifty-nine, some of which were unable to send samples because their mills were not operating on account of low water.

A second circular letter was sent to the delinquents, but we received few replies.

CO-OPERATION OF THE INDUSTRY NEEDED TO SUCCEED.

Now, gentlemen, it is impossible for the service to make this thing the success it should be without the heartiest co-operation of the trade. This work is your own personal concern, as much so, if not more, than ours. Your association has pledged its co-operation and has spent some money in the cause. Congress has made a liberal appropriation primarily to help your industry, and the Department of Agriculture is anxious to be of service to you and to co-operate with you.

We shall write again to those we have not heard from and shall hope for better results.

Please bear in mind, also, that data received will be considered confidential and in no way will the operations of any individual company be divulged.

I thank you for this opportunity of addressing your meeting and for your courteous attention.

The meeting was then declared adjourned.

THOSE IN ATTENDANCE

The following members of the American Paper and Pulp Association attended the meeting:

W. B. Wentworth, Penobscot Chemical Fibre Co., Great Works, Me.
A. W. Esleeck, Esleeck Mfg. Co., Turners Falls, Mass.
A. B. Van Allen, Carthage, N. Y.
D. A. Nicholson, Detroit Sulphite Pulp & Paper Co., Detroit, Mich.
J. M. Hollingsworth, Oswego Falls Pulp & Paper Co., Fulton, N. Y.
C. W. Tooke, Oswego Falls Pulp & Paper Co., Fulton, N. Y.
C. I. McNair, Northwest Paper Co., Cloquet, Minn.
H. L. Paddock, Oswego Falls Pulp & Paper Co., Fulton, N. Y.
F. G. Weeks, Oswego Falls Pulp & Paper Co., Fulton, N. Y.
W. H. Eaton, Eaton, Dikeman & Co., Lee, Mass.
Iver J. Terp, Northern Paper Mills, Green Bay, Wis.
B. A. Franklin, Mittineague Paper Co., Mittineague, Mass.
Frank L. Moore, Newton Falls Paper Co., Newton Falls, N. Y.
H. J. Cadwell, Champion Paper Co., Carthage, N. Y.
Charles A. Woodcock, Finch, Pruyn & Co., Glens Falls, N. Y.
A. Pagenstecher, Jr., Central Paper Co., Muskegon, Mich.
G. W. Sisson, Jr., Racquette River Paper Co., Potsdam, N. Y.
George C. Sherman, St. Regis Paper Co., Watertown, N. Y.
A. B. Daniels, L. L. Brown Paper Co., Adams, Mass.
R. D. Bertchy, Fox River Paper Co., Appleton, Wis.
J. H. Frambach, Cheboygan Paper Co., Cheboygan, Mich.
E. R. Behrend, Hammermill Paper Co., Erie, Pa.
Norman Wilson, Hammermill Paper Co., Erie, Pa.
George E. Bardeen, Bardeen Paper Co., Otsego, N. Y.
James N. Mohr, Reading Paper Mills, Reading, Pa.
David S. Cowles, W. H. Parsons & Co., New York.
C. H. G. Ingalls, H. H. G. Ingalls & Co., Castleton, N. Y.
John Jacobs, Pioneer Paper Mills, Ballston Spa, N. Y.
N. J. Bowker, Pettebone-Cataract Paper Co., Niagara Falls, N. Y.
S. A. Upham, Brownsville Paper Co., Brownsville, N. Y.
George F. Clark, Brownsville Paper Co., Brownsville, N. Y.
C. W. Lyman, International Paper Company, New York.
R. A. Rapp, Munising Paper Co., Munising, Mich.
Neal Brown, Marathon Paper Co., Wausau, Wis.
A. L. Pratt, King Paper Co., Kalamazoo, Mich.
E. F. Moody, Burgess Sulphite Fibre Co., Berlin, N. H.
Grellet Collins, Dill & Collins Co., Philadelphia, Pa.
G. M. McKee, Hinckley Fibre Co., Hinckley, N. Y.
R. A. G. Ault, Schmidt & Ault Paper Co., York, Pa.
D. J. Lawless, Onondaga Paper Co., Marcellus Falls, N. Y.
G. W. Murphy, Riverside Fibre Co., Appleton, Wis.
F. E. Murphy, Riverside Fibre Co., Appleton, Wis.
A. C. Gilbert, Gilbert Paper Co., Menasha, Wis.
H. J. Northcott, W. H. Parsons & Co., New York.
W. Glasson, W. H. Parsons & Co., New York.
Seymour Knowlton, Knowlton Bros., Watertown, N. Y.
E. T. Gardner, Colin-Gardner Paper Co., Middletown, Ohio.
R. C. Richardson, Richardson Paper Co., Lockland, Ohio.
Augustus R. Smith, Smith Paper Co., Lee, Mass.
H. W. Stokes, York Haven Paper Co., York Haven, Pa.
James A. Outterson, Le Roy Paper Co., Carthage, N. Y.
C. F. Briggs, Hartje Paper Mfg. Co., Pittsburg, Pa.
C. H. Remington, Remington-Martin Co., Watertown, N. Y.
W. H. Nearing, Pejepscot Paper Co., Brunswick, Me.
B. C. Bort, Highland Falls P. & P. Co., Chateaugay, N. Y.
B. S. W. Clark, Highland Falls P. & P. Co., Chateaugay, N. Y.
Edgar G. Barratt, Union Bag & Paper Co., New York.
C. R. McMillan, Union Bag & Paper Co., New York.
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H. R. Elliott, Union Bag & Paper Co., New York.
F. G. Weeks, Skaneateles Paper Co., Skaneateles, N. Y.
H. L. Harrington, Berkshire Hills Paper Co., Adams, Mass.
W. B. Moore, Berlin Mills Co., New York.
M. S. Flint, Berlin Mills Co., New York.
Robert Wolf, Berlin Mills Co., New York.
A. F. Robertson, Albemarle Paper Mfg. Co., Richmond, Va.
W. S. Whitney, Emerson Paper Co., Sunapee, N. H.
W. D. Ball, Carthage Tissue Mills, Carthage, N. Y.
W. D. Judd, Hampshire Paper Co., South Hadley Falls, Mass.
G. W. Whiting, Wisconsin River Paper Co., Menasha, Wis.
E. R. Redhead, Victoria Paper Mills Co., Fulton, N. Y.
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F. R. Shaw, Berkshire Hills Paper Co., Adams, Mass.
Austin Smith, Wrenn Paper Co., Middletown, Ohio.
J. F. Ryland, Standard Paper Mfg. Co., Richmond, Va.
A. M. Fletcher, Fletcher Paper Co., Alpena, Mich.
George H. Mead, Mead Pulp and Paper Co., Chillicothe, Ohio.
F. J. Gray, Burgess Sulphite Fibre Co., Berlin, N. H.
C. A. Hubbard, Woronoco Paper Co., Woronoco, Mass.
J. C. Smith, Bayless Pulp and Paper Co., Austin, Pa.
M. E. Marcuse, Bedford Pulp and Paper Co., Richmond, Va.
W. N. Chapin, Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y.
J. G. Luke, West Virginia Pulp & Paper Co., New York.
D. L. Luke, West Virginia Pulp & Paper Co., New York.
W. P. Herring, Jefferson Paper Co., Black River, N. Y.
George E. Crafts, Orono Pulp & Paper Co., Orono, Me.
J. D. Coffin, C. H. Dexter & Sons, Windsor Locks, Conn.
H. R. Coffin, C. H. Dexter & Sons, Windsor Locks, Conn.
C. H. Coye, C. H. Dexter & Sons, Windsor Locks, Conn.
B. C. Dickinson, Standard Paper Co., Kalamazoo, Mich.
M. W. Waldorf, Waldorf Boxboard Co., St. Paul, Minn.
F. S. Coolidge, Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y.
W. D. Jeffers, Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y.
W. L. Davis, Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y.
Alfred Leeds, American Writing Paper Co., Holyoke, Mass.
C. A. Dunklee, Cleveland Paper Mfg. Co., Cleveland, Ohio.

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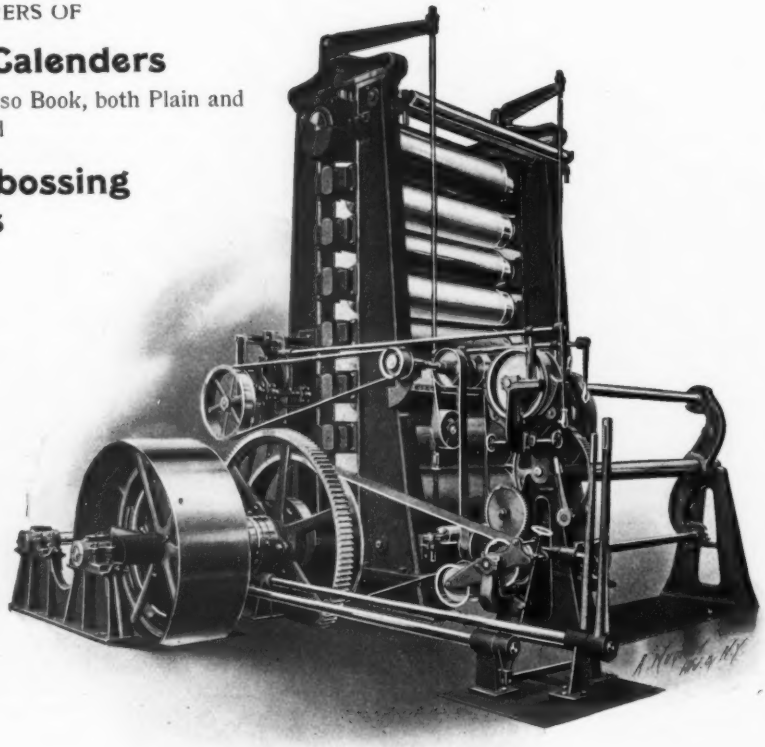

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¶ All attachments are located on the frame and above the floor.

¶ Intermediate boxes fitted with thrust bearing at outer ends, and are oiled by overflow from pan under top journal boxes.

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SPEECHES AT BANQUET

BEFORE introducing the speaker of the evening, President Hastings, who acted as toastmaster, read a telegram from Governor Dix, regretting that pressing State business detained him in Albany, and deprived him of the pleasure of dining with his fellow members of the association. Mr. Hastings then introduced the Hon. Frank R. Shattuck, of Philadelphia, who made the opening speech.

Governor Dix Unable to Be Present

THE TOASTMASTER — Gentlemen of the American Paper and Pulp Association:

It is with deep regret that I announce that Governor Dix is unable to be with us this evening, and I will read a message that has been received from him.

"Postal Telegraph Commercial Cables.

"ALBANY, N. Y., Feb. 16, 1911.

"Arthur C. Hastings, American Paper and Pulp Banquet, Waldorf-Astoria, New York.

"Unexpectedly, and greatly to my regret, I find it impossible to leave Albany this afternoon. I assure you that if I could consult my personal preference and pleasure, instead of being at the Capitol dealing with affairs of State, I would be at the Waldorf enjoying the comradeship of my fellow members of the American Paper and Pulp Association One of the penalties of being Governor is that it deprives me of the joy of your banquet. Can I do the next best thing to being present? Can I ask you to offer my compilments and greetings?

"Timber being the raw material of the paper making industry, you are the natural and practical conservators of trees and forests, and the wide interest you are taking in State and national reforestation is an object lesson worthy of emulation by all good citizens. A Chief Executive of the State, I am endeavoring to conduct the business of the State on the plain principles of honesty, economy and efficiency. In this endeavor, whenever and wherever possible, I am applying the sound and conservative methods that obtain among business men of the highest type. Such men as have brought the making of paper in America into the front rank of the world's great industries. In my work as Governor I am stimulated and encouraged by the knowledge that I possess the confidence of my fellow manufacturers, and I shall expect them to co-operate in every effort that may be made for good government, and honest and efficient administration.

(Signed) "JOHN A. DIX."

COVER OF THE BANQUET MENU.
Designed by Malcolm & Hayes.

Preliminary to introducing the speakers President Hastings said:

As an association we are to be congratulated that we have tonight so many members from all parts of the United States. The paper industry, I believe, through the tax which has been laid upon it in various quarters, is now beginning to rise, and will assert itself through the co-operation that is going on through the national association. Many manufacturers here tonight come from a great distance, and we are glad to welcome them in New York. As I understand, you gentlemen do not come here to hear the president make an address, as you get all you care to hear from him in the daily mail. So I will take pleasure in introducing merely the speakers of the evening who have consented to address you as manufacturers. We have to the south of us one of the old cities of the country that is probably as well known as any in the country, and I was reminded of that fact in reading the other day something that I thought applied to that city:

"Who knows the joys of friendship,
The trust, security and mutual tenderness,
The double joys where speech is glad for both?
Friendship, our only wealth, our last retreat and struggle,
Secure against ill fortune and the world."

This would apply to the City of Brotherly Love, and I have pleasure in introducing to you this evening the Hon. Frank R. Shattuck, of the city of Philadelphia. (Applause.)

Speech of Hon. Frank R. Shattuck

MR. CHAIRMAN, MEMBERS OF THIS ASSOCIATION, AND LADIES (Laughter)—It has been my very pleasant privilege to meet the Philadelphia daughter of this association on two occasions, and I have no hesitation whatever in describing her as an exceedingly fine and attractive young lady, and it is an added pleasure, therefore, to me, to be introduced tonight to her mother. And, at first blush, I pronounce her a grand old dame. (Applause.)

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The invitation that I received from your distinguished president, the Hon. Arthur C. Hastings, suggested I might speak on any topic that I thought might prove of interest to 500 down trodden paper manufacturers. (Laughter and applause.)

I approached the task with a fear in my mind suggested by the Bantam hen, which spread herself as best she could over a setting of ostrich eggs. She produced heat to herself, but no result. (Laughter.) By way of preparation I obtained copies of two paper trade papers. From the first I learned that it contained forty-four pages, and was in the thirty-third year of its existence (laughter), and I discovered that the decisions of the Board of United States Appraisers always ended with the words, "the protests are not allowed." (Great laughter.)

I found from the other, that while more in length and breadth, it nevertheless boasted of a four-page green cover, and therefore was enabled to go the first twenty pages better. But upon one subject they agreed, and from that I took the thought that the gentleman who introduced into Congress a free paper pulp bill will not become an honorary member of this association, and with the privilege of franking himself to these honorable banquets. In my efforts to become scientific from these sources, I was reminded of a friend of mine who was elected to membership of one of the Philadelphia cricket clubs, and he thought that he would prepare himself at home before he actively engaged in those pleasures that the club would give him. So he forthwith went and bought a copy of Dicken's "Cricket on the Hearth." (Great laughter.)

I note Mr. Chairman that I am in a grand galaxy of an all star aggregation. I have no doubt but the galaxy of stars in this constellation will be the golden gates which dwell upon our rosary of remembrance. (Great applause.)

Had I known that there were to be ladies present I would have started with the thought that I would like to embrace them all in my remarks. (Laughter.) I believe that the association does not indulge itself in great pyrotechnic displays or delight in long addresses. Being composed of prosperous and successful business men, it always gets directly to the point, and celebrates its own virtues and merits, and commemorates them only by a grand and glorious banquet occasion, such as we have tonight. (Applause.)

It must, Mr. Chairman, reach the sympathies of all of us members, as well as its guests, in a way that could not otherwise be done through the broad avenue of the Pylonic cavity, which Emerson said, of all men of the Anglo-Saxon race, was the shortest and most direct route to the heart.

I am growing so fond of this association by this time that I believe the words of Judge Shaswood might be apt and fitting, and I might perhaps truthfully say, that I believe that the morals that grow within these precincts are to be gathered with no vulgar hands; that they resist an unhallowed grasp, like the golden branch with which the hero of the Æneid broke open the adamantine gates that led to Elysium.

It is a great pleasure to meet with real men; men who do not extend their right hand of fellowship to a hypocrite, of whom there are so many in the world, men of whom I heard a description a few weeks ago by a bishop of Kentucky at a dinner which I attended, as those who wore out the knees of their trousers praying for six months in the year, and destroyed another portion of them during the succeeding period by "back-sliding."

Toasts Upon Which He Might Speak.

There are other toasts upon which I thought I might speak tonight. For instance, the progressive era in politics, a sort of rejuvenation of the old-time Mugwump, defended by Gen. Horace Porter as "A person beyond his intellect." Another was "The Suffragette," described, from the Chicago standpoint, as a woman who is ready to raise hell, but not children. (Laughter.) Then there might have been that patriotic toast, "Our Country," with the text of that famous telegram written by another John A. Dix: "If anyone undertakes to tear down the American flag shoot him on the spot." (Applause.)

And, gentlemen, this last reference brings to my mind thoughts along a certain line that have been there so often that I will give voice to them tonight. They concern the indifference and the general opposition of the public at large to the majesty and supremacy of the law. It is as true now as when Edmund Burke spoke the lines: "We may bite our chains if we will, but we shall be taught to know ourselves and learn that man is born to be governed by law." The law is the safeguard of all private interests, of honor, of life, of liberty, and especially are all subject to the law and in its keeping. If this were not true every man would have a like right to everything. It impresses me that there is not that reverence which should be innate in every good American citizen for the edicts pronounced by the courts of the different States and by the Supreme Court of the United States. Men are prone to criticise not only the statute laws, but also the decisions affecting them, having general reference to public and private rights and the trade and commerce of the nation; and most of the criticism comes from those who are not possessed of sufficient knowledge to properly debate the subjects, and if they were all molded into one mass they might be of sufficient weight to produce a reign of anarchy or socialism; but their isolation renders them harmless, though their expression bids fair to take away that spirit that should pervade the intellect of every man who wants to acknowledge that he is a good American citizen—patriotism. Selfishness, my friends, has been the motive power since Adam delved and Eve spun, and there are many who would undertake to teach us that talent is nature's supremest law.

I do not intend to dilate upon this subject, nor argue the proposition as I pronounced it. I simply want my words, perhaps, to be remembered by those who hear them, and make me stop when you are inclined extravagantly to criticise in an adverse way the law of the land that is given and enunciated to us. I know nothing more beautiful to me than the words of Horace Dinney, who was perhaps the greatest of all the famous Philadelphia lawyers, when he spoke of the Supreme Court of the United States. He said: "It is the august representative of the wisdom, the justice and the learning of all the people in the exposition of the Constitution and laws. It is the venerable arbitrator between the citizens in all questions touching the extent and sway of constitutional power, and it is the great substitute for war and the arbiter of peace in controversies between the people, the citizens and the Union." (Applause.)

Gentlemen, by reason of the rapt attention that you have given to me it is only fitting that I should say that the members of this association have demonstrated the profession of a catholicity of brains and exemplified the universality of good fellowship, and I trust that you may always feast upon the honey of hyemetus and quaff the nectar of the gods from the golden chalice. (Applause.)

The Toastmaster—Gentlemen, you have heard the honeyed words of the man from Philadelphia. I next have the pleasure of introducing you to a man who raises his own honey. I had the extreme pleasure of being entertained by him at his home in Wisconsin, and everything that he had on the table he said he had either raised or shot in the immediate vicinity. He said that he had learned the art of entertaining, and his expression and explanation of what was the true art of entertaining appealed to me. He said that it was to give the man free access to his house, plenty to eat, and let him do as he damned please. (Laughter.)

The Hon. Neal Brown, of Wisconsin, I have the pleasure of introducing to you. (Applause.)

Address of Hon. Neal Brown

Ladies and Gentlemen—I want first to arise to a question of personal privilege, if I may. You have heard from the gen-

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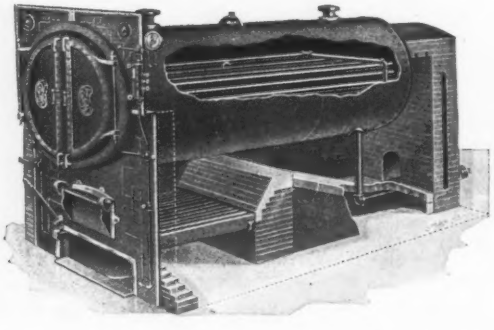
of our products. Forty-one Years in continuous daily service and still installed at intervening periods are giving as equally good service. business was founded, to give the best, regardless of the cost or profit. little beyond. That we have successfully lived up to and are today of our boilers are installed in the Paper and Pulp Mills of the



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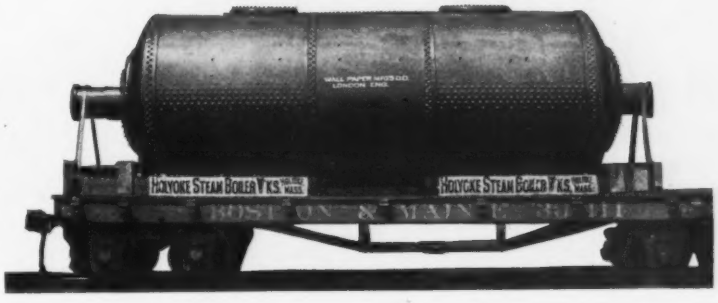
This Bleach Boiler is the result of more than thirty years of study and practice. It is the most complete machine of its kind in the world. There are over **700** of them in use in the United States, Canada and Mexico, giving results that are economical and satisfactory in every respect.



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In addition to shipments in barrels, we are now making also shipments of our Sizings in tank cars, a delivery having many advantages over barrel shipments; preventing leakage and waste, also saving expense of handling and storing barrels, both filled and empty, and guaranteeing absolute cleanliness in transferring the Size from car to storage tank and from storage tank to beater; no room required for storing barrels, and last and most important, the lower price, as the cost of the barrels is deducted from price of Size when quoting on shipments in tank cars.

We shall be pleased to give you further full details on application.

VERA CHEMICAL COMPANY

Western Factory
North Milwaukee, Wisconsin

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Stoneham, Mass.

tleman from Philadelphia. I have often passed through that city, but I did not stop because I was afraid that I might make some unseemly noise there and arouse the populace. (Laughter.) Of course, I do not expect a very great amount of knowledge in New York city as compared with the rest of the country, and since I have been here a member of the aborigines in New York has asked me if I was that O'Neal Browne, who was indicted in Chicago for bribery or something. (Laughter.) I think there was a man by that name indicted there for bribing somebody or other, but they are always indicting someone there, and it ought not to cause any distinctive comment of any sort. (Laughter.) Anyway, my name is not spelled with a final "e"; it is B-r-o-w-n-. So that you can distinguish between myself and the gentleman in Chicago who was recently indicted for something or other connected with the United States Senatorship. I did not feel like trusting myself to extemporaneous manuscript this evening. I did not know what stimulus I would have here, and I have adopted my manuscript for the most part for the reason that I would have an accurate record of what I had said that could be kept for trustworthy hands. (Laughter.)

The occasion does not call for any ambitious theme or ambitious platitudes or didactics. The victims of the speakers' table should not be compelled to swallow cobblestones after everything else has disappeared. Many good feasts are spoiled by this diet, and guests depart from them not only swollen with insolence and wine, but embittered by the cobblestones of the oratorical stirrup cup.

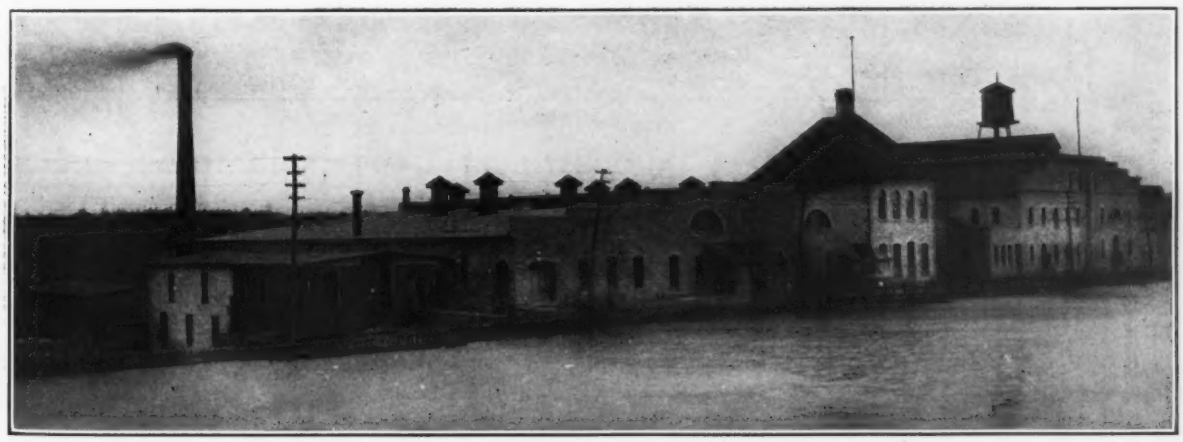
This is a time when the cant of the demagogues and the self-praise of fustian patriots provoke much cynic mirth. "I am the only simon pure friend of the people; trust only those who are stamped with my approval," is the constant cry of the Pecksniffs of our political life. They call to themselves, as were called to the Cave of Adullam:

"Everyone that is in distress, and everyone that is in debt, and everyone that is discontented."

It will be noted that it is impossible to get a majority from every section of this country drunken with hysteria at the same time. When we in Wisconsin have a fit of hysteria it is pretty certain that New York and the East will be found sober. When out West we are wallowing in the initiative, the referendum, the recall, the interregnum, primary election and every other form of legislative and popular inebriety, we hopefully look to the East for sober thinking.

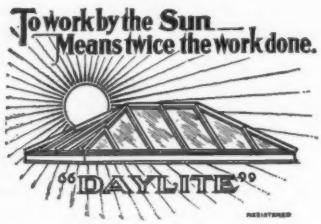
A Trainload—Thirty-four Cars—of Wood Pulp From the Lake St. John-Saguenay District, Headed for the United States.

Of course those of you who are from this metropolis are necessarily unfamiliar with Wisconsin and the West. If you had this familiarity you would know why I spleen on many of these Western cure-alls. Being a Wisconsin Democrat, I can afford to be candid, for such a one lives—and dies—without hope of office. I sum up my thought on this, with the statement that no political Dowie, or de Cagliostro, can ever achieve the Presidency—except as the result of an accident. Such a one may occasionally come to great fame in a State or a district, but spread him out and he flattens out. He may charm Chautauquas, but be cannot be President. And, speaking of Dowies and de Cagliostros, leads me to say that in the science of fakery a mutual admiration society is a necessity. The American Association of Political Fakers has its grips and its passwords, its grand hailing signs, its ritual and its formulas. But worst of all for sober citizenship to endure is the reciprocity of mutual admiration among its members. Shallow calls to shallow from the Golden Gate to the Eastern ocean. Each is the valet of every other deified sham. When one of these comes to Wisconsin to tell of how he put down graft in San Francisco or



General View of Plants of the Thilmany Pulp and Paper Company and Union Bag and Paper Company, Kaukauna, Wis.

THE RIGHT LIGHT



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grasshoppers in Kansas, or irrigation in the deserts, or on the way to conserve our coal by keeping it and using it, or on the fate of posterity two thousand years hence, or on the true theory of tittlebats, he devotes a considerable time to feeding the Gargantuan doses of flattery to the local avidities of his kind. And this even in

"The verdant retreats of Academus."

For some of our universities, through a joint circulatory system, excel in these banalities.

THIS THE AGE OF UNIVERSAL SUSPICION.

The muse of history will record this as the age of universal suspicion. Our self-sanctified ones give out certain formulas; formulas for their conservation fad; formulas declaring the death of individualism; formulas for the interpretation of constitutions and laws; formulas embodying all kinds of inconsequential skimble skamble stuff. He who does not pronounce one of these formulas according to the commendments is a suspect. I am already suspect, because in the days when I knew no better I acquired a little stock in a paper mill, in a street railroad, and a very modest interest in timberlands. I know I cannot live these offenses down, because my pronunciation is bad.

Far be it from me to reproach you, but suspicion against me will be augmented in certain quarters because of even this temporary association with you.

But in other quarters you will be suspect because of your association with me. One of your offenses is like that which Jack Cade charged against an eminent citizen of London in condemning him to death, according to Shakespeare:

"Thou has caused printing to be used,
And, contrary to the King, his crown and dignity,
Thou has built a paper mill."

Out in Wisconsin the genius of suspicion is embodied in a law which prohibits a stockholder in a public utility that furnishes service to a municipality or any of its inhabitants from holding office in the municipality. Several thousand more or less respectable citizens of Wisconsin have fallen under the ban of this law. If it were enforced the depopulation of office would exceed that which follows a Democratic landslide. But we don't enforce it. It was enacted as a simple and inexpensive tribute to the virtue of its inventors.

"They bid us flout the law we make;
They bid us make the law we flout."

"He has a bad heart," is a new form of indictment against those who cannot be found guilty of any definite offense. We observed in the impeachment trial of the Secretary of the Interior, that the prosecuting witness, after admitting that he had no very definite instance of official malfeasance to present, still clung tenaciously to the suspicion that the secretary had a bad heart. The secretary could not pronounce the formulas of sham conservation, according to the commandments of the priesthood.

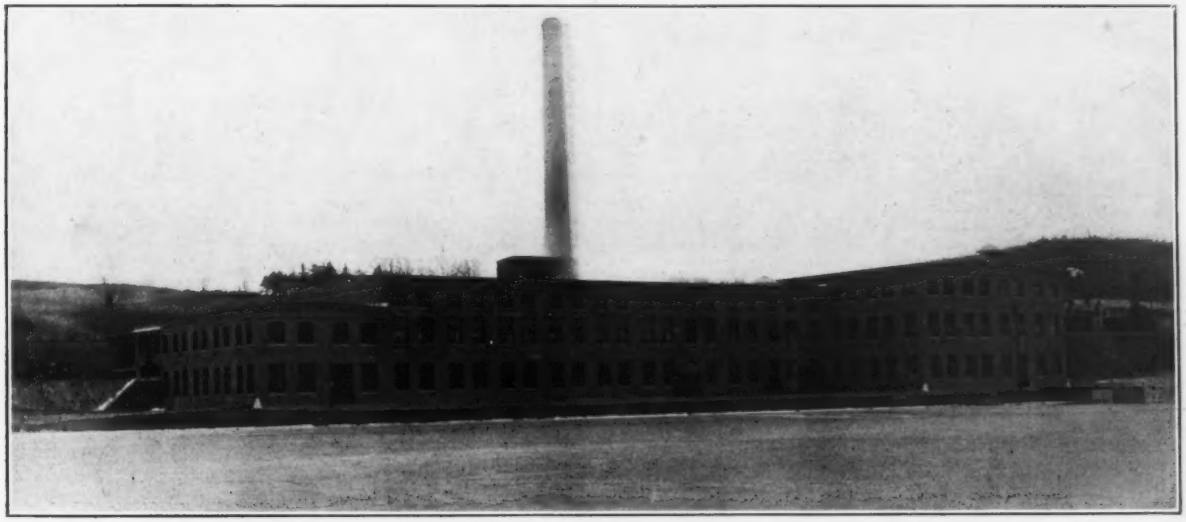
In the Menominee Indian Reservation in Wisconsin, whose natural resources I have many times depleted with a fly rod, the Government forestry service, under the guidance of the late Chief Forester, aided by Congressional stupidity and ignorance, adopted a formula of conservation, for lumbering operations that has been a joke and a byword among practical lumbermen throughout the country. Under this régime the Indians have not only lost several hundred thousand dollars in the stumpage value of their timber, but the tribal funds have been greatly depleted. Let any real lumberman criticise this management, however, and he is accused of representing the "interests." Put a citizen in this pillory, and anyone may throw a dead cat at him with impunity.

Recently the President was informed that the men he selected for judicial positions must not have "bad hearts;" must be those who would decide causes in the "interests of the people," whatever that may mean.

If the President would only collect campaign funds of certain of the predatory rich and then turn around and kick them out of the White House he would endear himself to the Cult of Universal Suspicion.

Retributive justice comes when the suspectors begin to suspect each other. We learn that soon after the expatriate from Africa returned to his own fond shore he met the Secretary of the Interior and greeted him effusively, not to say delightedly, slapping him on the back in friendly familiarity. This was enough, as it is said, to cause the ex-Chief Forester to suspect even the ex-President of having a "bad heart." The wing of friendship would not have moulted a feather if the ex-President had only licked the secretary to a frazzle.

But no longer does our ex-President, in the language of the Book of Common Prayer, "hold in his hands all the corners



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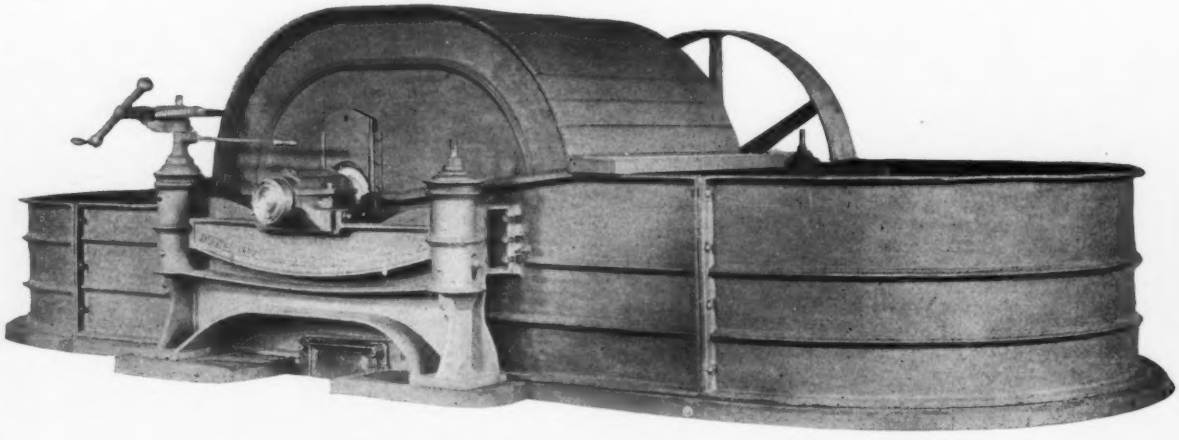
EAST DOWNINGTOWN, PA.



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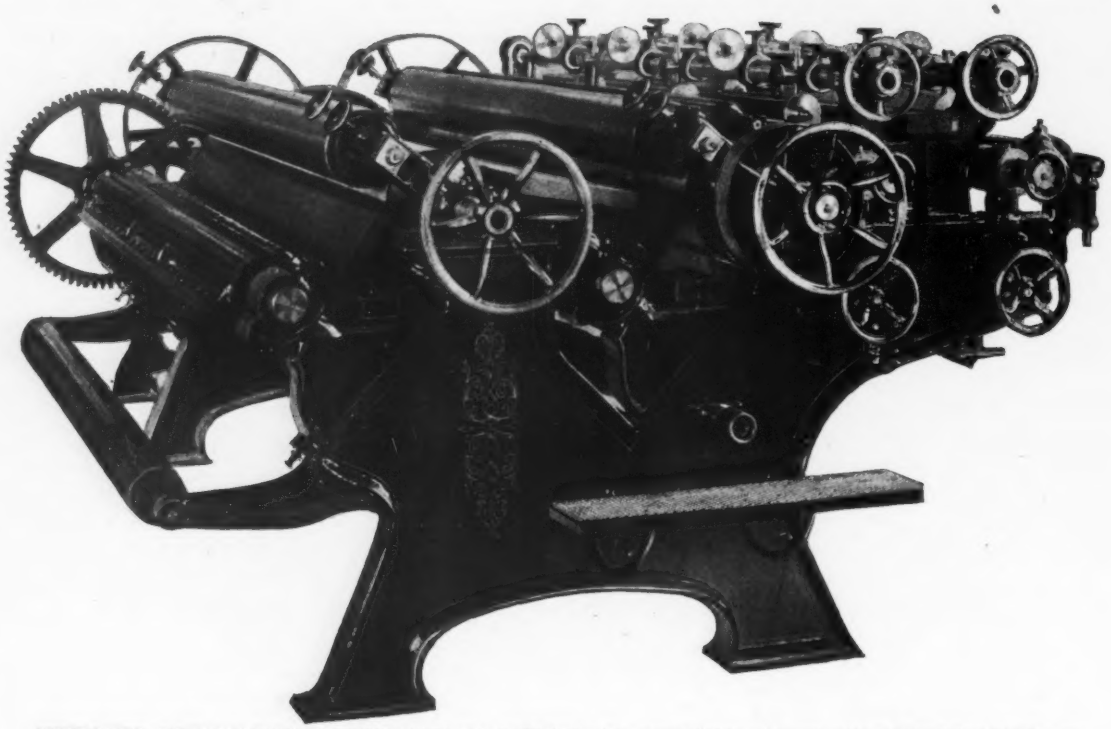


IMPROVED DOUBLE CUTTER AND DUPLEX SLITTER—Changes Width of Sheet without Breaking the Paper.

of the earth." The problem, "What shall we do to our ex-President?" has been solved by the little gods of politics.

In this connection I have observed a vague query circulating round about, even in the woods of northern Wisconsin:

"Can he who has gone out, or gone down and out, come back?"

Well, as a warning, I would remind you that Explorer Cook has come back.

An Athenian Proverb Applied.

The Athenians had a proverb, that the gods would not allow any mere mortal to be bigger than they were. When they found a colossal ego stalking about they commenced to plot to reduce him to the ranks.

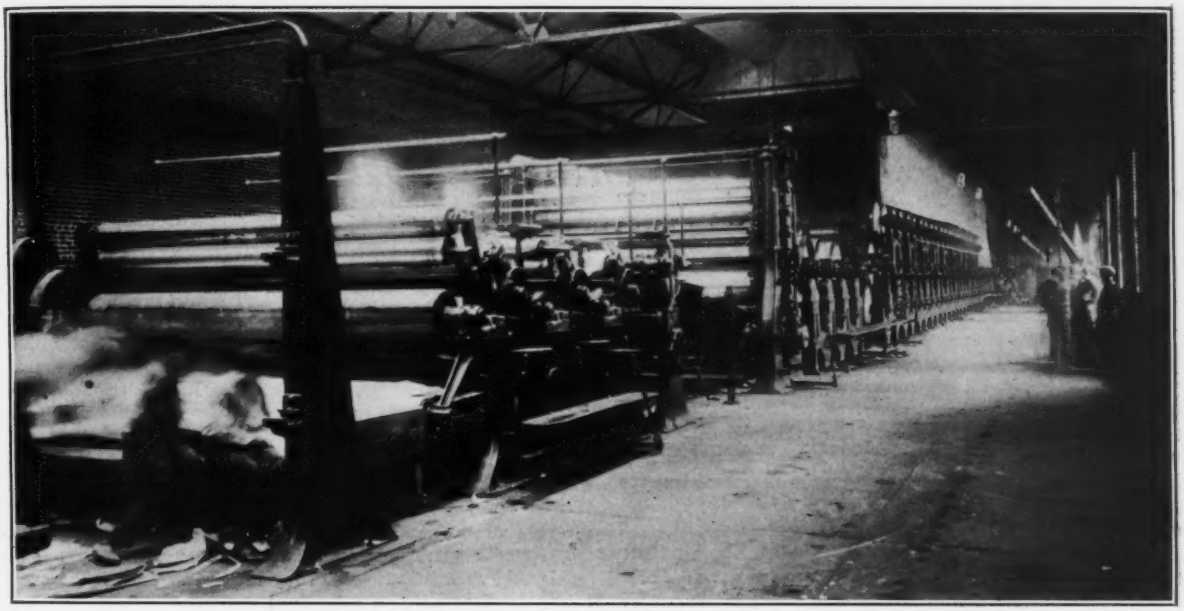
tions. Public hysteria always fades to a whisper; false gods are cast out, and popular favor, however duped into strange ways, always returns to the old time worship of modest worth and true manhood.

There are two kinds of hero worshippers:

Those who worship the hero for what he really is.

Second—Simian chatterers, who worship the hero for what they think or pretend he is, and for what he pretends to be.

The last are the most numerous. In this class belong the yellow magazines. They deal in specialized mendacities; they have commissioned a corps of. yellow minded scribblers to spy out the land and bring back a wilderness of falsehoods. They can magnify one man in buckram into an army. They



Largest Board Machine Yet Made—In New Mill of the Alton Box Board and Paper Company, Alton, Wis.

Speaking of heroes, reminds me that if I had the grooming of a hero, especially one of the hysterical kind, I would place close to his ear some mentor equivalent to the slave who accompanied a Roman conqueror on his triumphant return to Rome. It was the duty of this slave to ever and anon whisper to the proud one:

"Hominem memento te." "Remember, thou art a man."

Had this custom been attended to seasonably in recent days we should have escaped some discomfort.

I am minded to say that there are two kinds of heroes:

First—Real heroes.

Second—Those who have a good press agency and a well organized clacque.

Or, to paraphrase the matter in another way:

Some men are born to greatness; some achieve greatness; some have greatness thrust upon them, and some have a good press bureau.

Our press bureau creations in greatness stick up all over the country, like windmills in Holland.

Level spaces run between, where commonplace, unadvertised individuals are toiling and serving man, though without lip service or eye service. Most of these press bureau protuberances become in due time mere depressions or excavacan take the commonest and cheapest kind of human clay, and mould it into a magazine hero. They canonize stupdity in slavering superlatives, and from them any demagogue can get a shining halo. They keep the show window supplied all the time with at least one master hysteriac. When he becomes slightly frazzled and moth eaten they can replace him with another.

They sometimes take a plain citizen, respected and trusted by all who know him, and depict him as a monster of iniquity. One of the foremost citizens of Wisconsin being thus pilloried was so resentful that he obtained a large verdict for libel in this city against the traducing magazine. The literary red light district of the country lies mainly in New York city, with some small slums in Philadelphia and Boston. Its popular habitues tour the country, not searching for the truth, but for whatever is sensational. One of these came to Wisconsin to write us up. Among his numerous mendacities he stated that the Wisconsin lumbermen, after cutting the cream of the timber, had sent fire through the rest. Also, that steamboats navigated the Wisconsin rivers, until the destructive breed of lumbermen, by cutting off the forests, caused the rivers to fill up with silt. Some of you are lumbermen and know how impossible it is that a lumberman should set fire

to timberlands. Every school boy in Wisconsin knows that outside of the Mississippi and the river mouths that have been dredged into harbors on Lake Michigan, a steamboat on a Wisconsin River has ever been a curiosity. These are but samples of ten thousand silly falsehoods that these creatures have served up to a gullible public. In their lexicon of falsehood they have thus exploited water powers and public lands, and conservation and industrial development, and local conditions and local history. They are master clerks in Falsehood's clearing house. They play chorus to our army of ghost dancers who grow lugubrious over the anticipated woes and deprivations of posterity, like hired mourners who follow to the grave and weep and beat their breasts with simulated grief. To them we owe much of the swollen egotism of our show window figures. Day by day, however, the fictional adornment of some one of these human clothes racks is stripped off, and he stands naked to all the winds that blow.

Happy should be the popular idol who can save his heat and conserve his resources; who can value adulation at its true worth; who can be surfeited and not become an egomaniac. He will remain steadfast in life and in death will not be forgotten. The popular leader who cares more to further wise constructive statesmanship than to win the plaudits of fools will have his great reward. For examples of the qualities which we all hold priceless I give you two men who silence frantic boast and idle word:

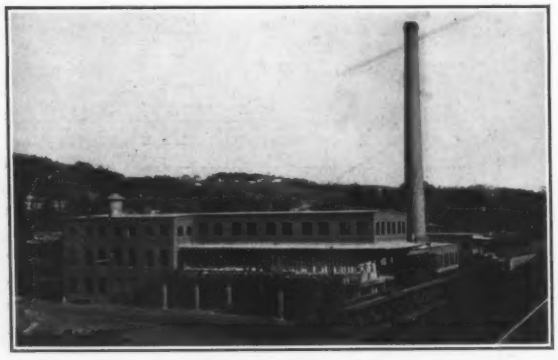
"Whose names on earth in fame's eternal records live for aye"—Lincoln and Grant.

THESE ARE TIMES OF CONFUSION.

These are times of confusing political affiliations. As one man may belong to several clubs, so he may belong to different political parties at the same time. When you think he is a Republican he may be a Democrat, or vice worser. Out of this obscurity I give you these crytic sayings for your good-nights:

Our prosperity cannot possibly depend on the difference between 47¼ per cent. and 47 per cent. tariff duties.

THE TOASTMASTER—We were, gentlemen, very much disappointed tonight in not having with us the Governor of this great State and a member of this association. I am sure he wanted to be here, but I know that the task he has before him in Albany of



MODEL NEW TWO MACHINE MILL OF THE FITCHBURG (MASS.) PAPER COMPANY.

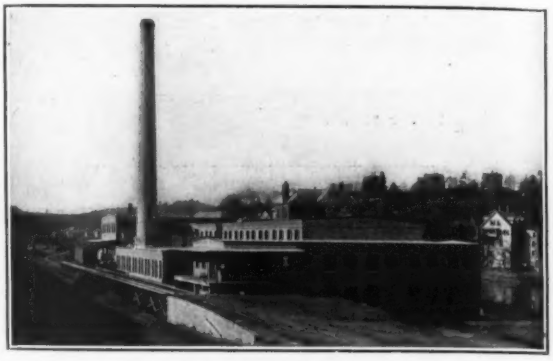
electing a Senator, or keeping from electing a Senator, is keeping him very busy. In the meantime we have a man who used to elect senators, and had something to do in Albany, and who at present is very easy in his time, and had the good fortune, for us, to be in New York tonight, and accepted our invitation to dine with us, and consented to say a few words to us, the Hon. E. A. Merritt, Jr. (Applause.)

Address of Hon. Edwin A. Merritt

MR. PRESIDENT AND GENTLEMEN OF THE ASSOCIATION—I do not feel a stranger in your midst.

A voice—"Oh, you Merritt!"

It has been my good fortune to be present at many of these dinners, and I have enjoyed them very much. I like the social side of these meetings; it is what might termed "clubby," so to



ANOTHER VIEW OF THE MILL OF THE FITCHBURG (MASS.) PAPER COMPANY.

speak. Those who desire to listen, listen. (Laughter.) Those who do not desire to listen, do not listen. Those who desire to eat, eat. Those who do not desire to eat, do not eat. I think there are none who do not desire to drink. (Laughter.) If there be any such they have escaped my attention. I need not apologize, I suppose, knowing so many of your gentlemen, for being here or for being called upon. It was distinctly understood that I was not to be called upon. I have not reduced any remarks to writing. (Laughter.) I never do. I would hate to see them. (Laughter.) I never could tell what I was going to say far enough ahead of the time when I would say it to tell what I was going to say at all. I ought to be embarrassed in this presence, and I am. I am making the greatest struggle of my life not to show it too much. I had a friend of mine who went out into Michigan not long ago traveling about, and he struck a small country town. He was not accustomed to shave himself, and he inquired of the proprietor of the little hotel where he stopped if there was a barber there, and was told that there was not a regular barber, but that there was a fellow who sometimes performed the operation, and that he would be sent for. Presently a young man appeared with a small hand satchel from which he produced the necessary implements. As he was about to start in on the operation of shaving my friend he said: "If you don't mind, sir, I wish you would lie down on the lounge." My friend said, "All right, if that is your way. It is a new thing to me, however." And he did. But it sort of bothered him, wondering why this request had been made, and when it was over he said to the barber, "Will you be good enough to tell me why you desired me to lie down on the lounge before you performed this operation?" The barber said, "Well, the fact of the business is that you are the first live man I ever shaved." (Laughter.) He said, "I am not a real barber, I am an undertaker's assistant."

TELLS A FEW GOOD STORIES.

So, I am not a real afterdinner speaker. (Laughter.) I attended a lunch once in Syracuse a good many years ago. Former Governor Black, of this State, was there with his staff. It happened that at a preceding session of the Legislature the Governor had vetoed a number of bills, which are regarded as what we are accustomed to call organization measure for the County of Onondaga, sometimes commonly called the State of Syracuse, and he was not received with

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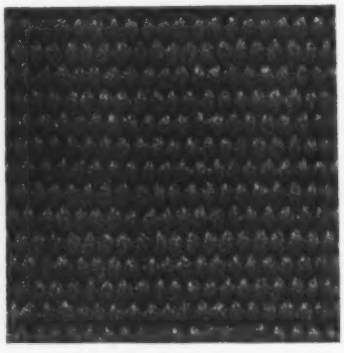

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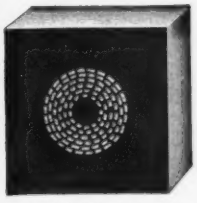

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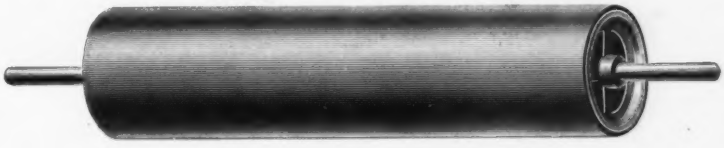

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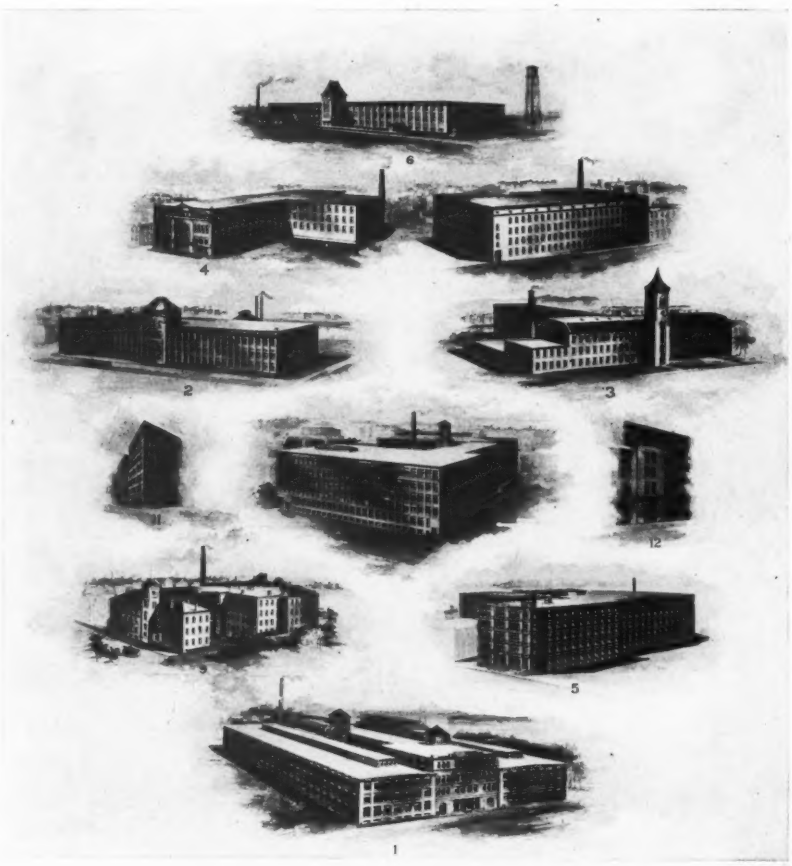

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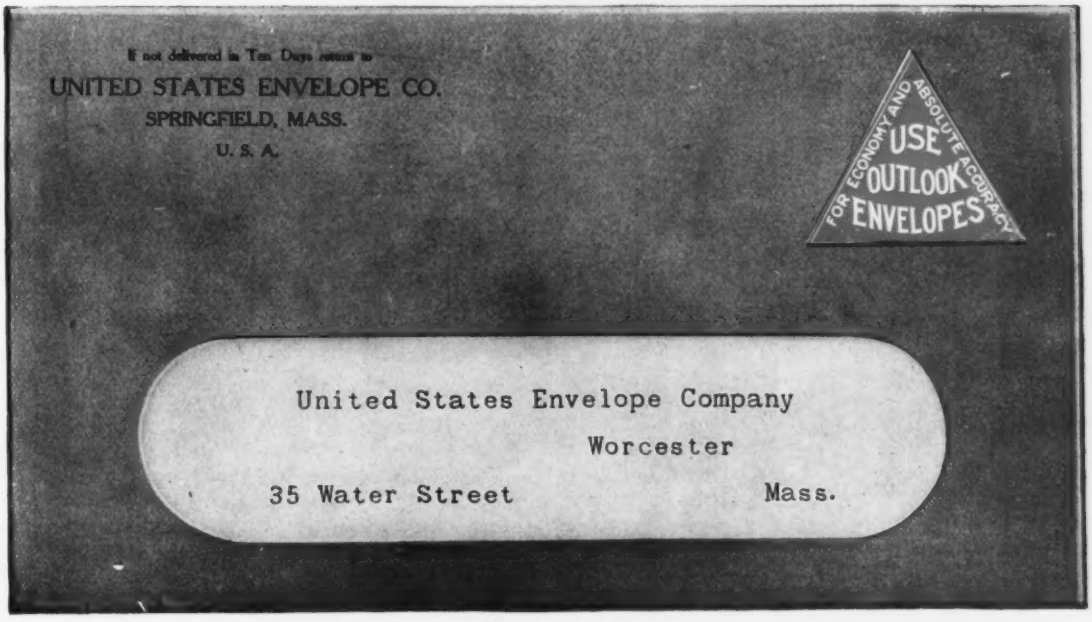

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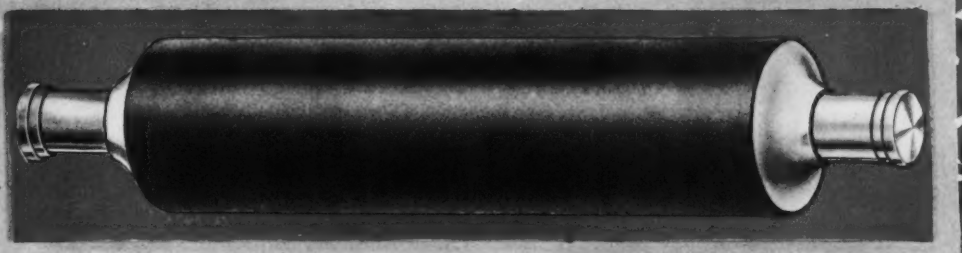

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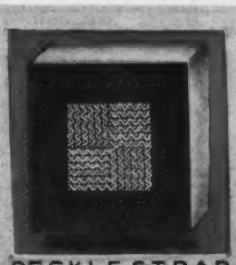

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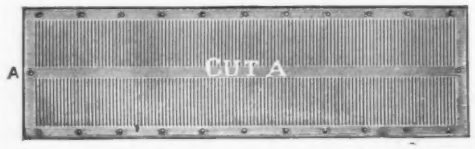

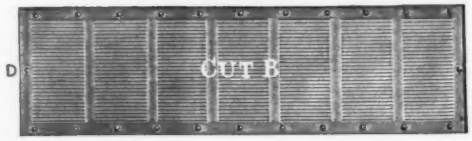

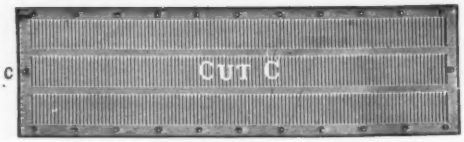

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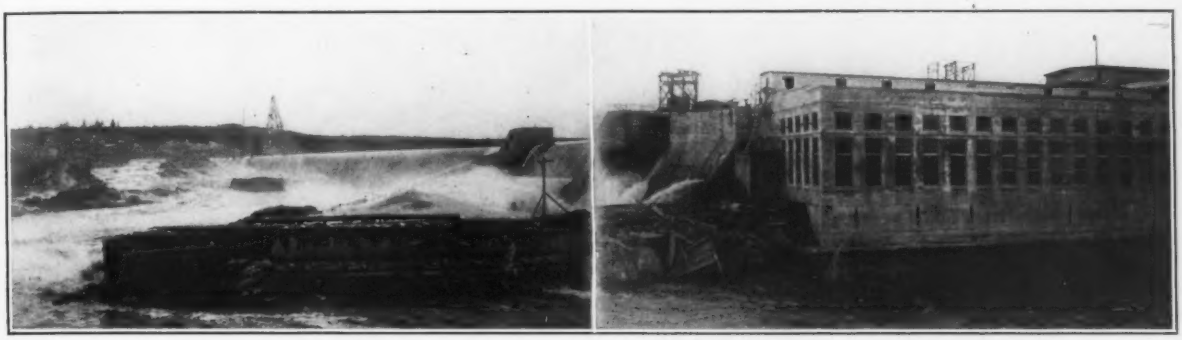
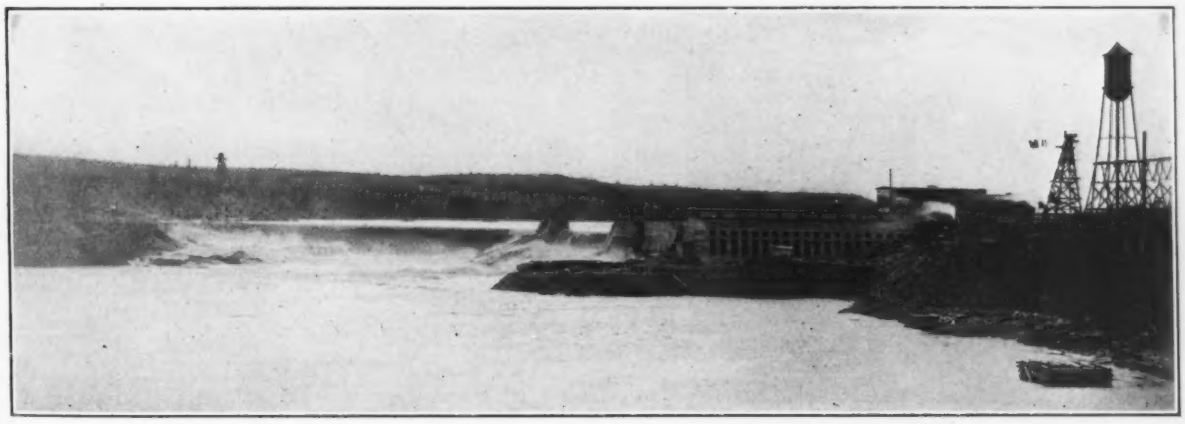
any great degree of enthusiasm; but after the lunch, which followed his visitation about the grounds, of course, they had to have some talking, and Senator White, since Governor White, was called upon, whereupon some maladroit friend arose without having consulted anybody, I think, and said that he was very sorry that Senator White, the then Senator, was



NEW PULP MILL OF A. E. REED & CO., LOCATED AT BISHOPS FALLS, NEWFOUNDLAND.

not present, that he was sure he intended to have been present, but that he of his own knowledge knew that at the moment when the Governor appeared from the grounds he had been called upon to act as a judge of some class of cattle or horses, or something of that sort, and that seemed to be the reason why he did not appear as a part of the exhibition attendant upon the Governor of the State. Well, it fell quite flat; and the next man called upon was a gentleman from Rochester, a former Speaker of the Assembly, Mr. O'Grady, and he started his speech in this wise. He said: "Not long ago I was traveling in the State of Connecticut, which is a State of great inventions, and I was sitting in the smoking car



FOREBAY INLET AND CUTTING-UP MILL OF A. E. REED & CO. AT BISHOPS FALLS, NEWFOUNDLAND.

reading a novel and smoking a cigar. I noticed across the aisle from me a gentleman reading a newspaper with a large brown paper package on the seat beside him, and from that package there came forth mysterious sounds; there was clicking and the sound of wheels and things of that sort that made him curious, and finally he could not stand it any longer. He said: "I turned to him and I said: 'I beg your pardon, sir, but would you mind telling me what you have in that brown paper package?' He looked up in a sort of curious way and said: 'That is a Connecticun.' He said: "Well, I had to be satisfied with that, of course, and I attempted to read my story, but I continued to hear these noises, and finally I made up my mind that I would find out what there was in that package if I could, and so I again laid down my book and crossed the aisle, and I said to him: 'I know that it is an intrusion on my part to pursue this subject, but really, sir, I do not know what a Connecticun is, and I am very curious; I hear sounds and I cannot read my book, and I am going to intrude on you to the extent of asking you what in the world is a Connecticun, and I would like to have you show it to me.' The fellow laid down his paper and said: 'Well, it is none of your business.' He said: 'We both agree to that; that is admitted. But the man said: 'I suppose you are curious; I see you are, and I will tell you what it is, although it is a rather disagreeable subject. I have got a brother, who is addicted to the use of alcoholic stimulants to an extreme degree. Following this up for a long term of years he has finally accumulated a very serious condition of his nerves; I think it is called delirium tremens. He has got past that period in those pleasant dreams when he sees grateful and pleasant images, and he is pestered with the sight of poisonous snakes, principally scorpions, and this Connecticun I have invented, being a citizen of Connecticut, the land of inventions, to kill those snakes.' My friend said to him: 'That is all right, but, my dear man, are the snakes your brother sees real snakes?' The man said: 'No, I know that is not true, and this is not a real Connecticun.'" (Laughter.)

NOT MAKING A REAL SPEECH.

So if anybody expected a real speech they won't get one. I am pretty old fashioned about a good many things. I am old fashioned in my politics and I am old fashioned in my tariff. I cannot see anything in the world that looks like a free trade departure that

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We are informed that certain Paper Mills are infringing on our Patent granted on the HOFFMAN COUCH ROLL.

Having expended considerable time and money in perfecting same, we hereby give notice that our rights will be protected.

May 1, 1910 THE MOORE & WHITE CO.

18 P. T.

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Farnham Patented Drive for Cylinder Paper Machines

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With this drive attached to the cylinder machines, the felt and cylinder drive equal and in unison with each other, thus insuring a perfect sheet of paper to be formed.

A great success in the saving of felt and the production of paper.

Write for Bulletin containing further information.

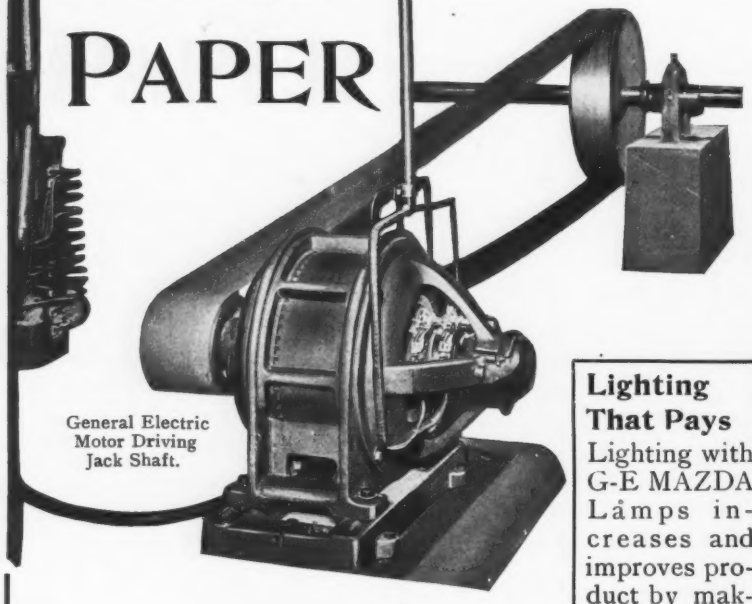
8 P. T.

40% MORE PAPER

Paper mills using electric drive are producing tissue 40 feet per minute faster by driving with

General Electric Motors

than they were able to with the old mechanical drive—a 40% increase in production. This paper is of **evener weight** and "shrinkage" **is much less** than formerly.



General Electric Motor Driving Jack Shaft.

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The increased production and reduced "shrinkage" are due to the great steadiness of speed given by General Electric variable speed motors having a uniform pull throughout each revolution. Steam engines have a varying pull at different points in each revolution which causes "shrinkage."

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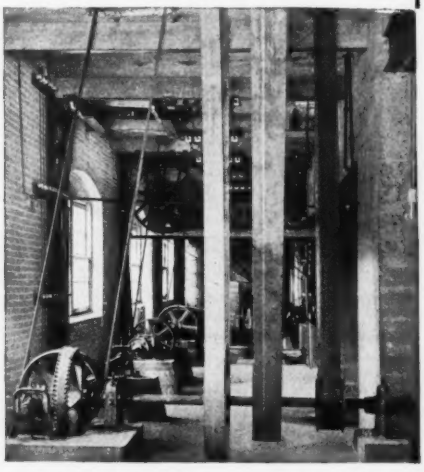
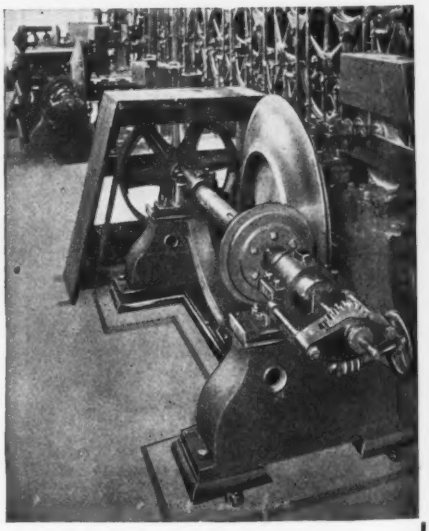


Jack Shaft Driven by Motor illustrated at the left.



Paper Machine Driven by Jack Shaft shown above.

Write today to our nearest office stating your drive problem. They will show you how to reduce your "shrinkage" and increase your paper speed.

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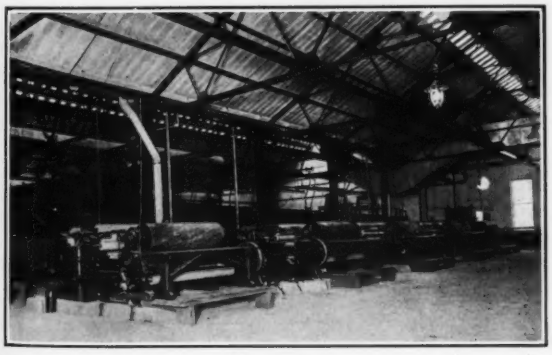
looks good to me. And I don't care what you or anybody else may call it, the name don't signify.

Some wise man said once—or he thought he was a wise man—he has been quoted as a wise man—he was a candidate for President of the United States, at any rate—that the tariff was a local issue. Well, of course, he was wrong. It is not a local issue. The effect of this particular schedule may be local, but it is either as broad as the nation or it is nothing at all. Anybody who is going to go at it piecemeal is going to destroy it absolutely. If the citizens of the Middle West cannot stand for the citizens of the East and the State of New York they cannot take their share of the burden if we take ours, why we have not anything left in a little while to go on at all, so far as theory is concerned, and in the war of interests the strongest will take the best care of themselves as they always have. There is not any use of our humbugging ourselves about the proposition one way or the other. It is something in the minds of everyone here that is in business or in any associated business. It is not a local issue. It is not fair to treat one particular kind of business as though it were separated from all the other interests of the country. Under the theory which we have had in practice for so many years the general prosperity of the country has been beyond any that had ever happened to any people, not only for the rich, but for the poor, and an attack upon it in separate instances, separate items, separate interests, is not only unfair, but it should be a warning to all who are interested in things that are not now attacked, that if it be considered wise or fair, or decent, to pick out a separate schedule and deal with that by itself, that they who are not to lie upon the frying pan have only got to wait a little while, because their turn will come. The interests that you and I and others here represent, if we don't have what we regard fair treatment, we will see to it that the same treatment that is meted to us is meted to the other people who today are complacently sitting back and thinking that this ends the agitation. (Applause.)

Somebody or other has said that they thought that the paper men made a mistake in not taking gracefully the proposed reduction of the Mann bill a year ago; they thought that if that had been done it would have ended it. Well, all I have to say, in my opinion—and my opinion is just as good as anybody else's, because



Wet Machine Room—Sulphite Mill, Marathon Paper Mills Company.

it is all a guess anyhow—that they are just so much better off, up to the present time, than they would have been. (Applause.)

They can start on from this point and make the best fight they can. The thing that will defeat them in the end is to lose their own courage in themselves. There never was a time—there has not been a time in twenty years—when there was as good a chance for people who did not believe in humbug to stand for their own interests; to insist that they shall have the kind of treatment that is fair and decent among the business men of this country; to take what is handed to them, of course, because they have got to, but not by their own consent, because in the long run the justice and the sense and the wisdom and fairness of the people of this country will do more justice to all than anybody will get by making uncalled for concessions of any kind. That is about all I want to say. (Applause.)

I have some friends who are very fond of the song at a particular stage of the evening, and they sing it over and over:

"The old kind of religion is the kind I like to see;
It was good for Paul and Silas, and it's good enough for me."

Machines Nos. 1 and 2, in Mill of the Marathon Paper Mills Company.

Our Political System a Pretty Good One.

I believe that we have developed in this country a pretty good system. I don't believe that the people of this country without the regard to politics—and certainly we are not talking politics here—differ very much, fundamentally. There is a lot of loose talk. There is a lot of special interests one way or the other which gets before the public. But the great solid, sensible, intelligent people of this country will stand for what is fair, and, therefore, it is no time to lose courage, and it is no time to surrender anything, and it is no time to allow, for the sake of what seems a temporary expediency, anybody to get away with the argument. What they can do to you you cannot tell, but they can't do very much without your own consent. And if everybody stands solidly and firmly and sensibly and temperately for the things that they know are right and fair in a business way, they will get a whole lot of consideration that they would not get if they were willing to surrender just in order to save a scrap. There is nothing so wholesome in the world as a fight. There is nothing in the world that does everybody so much good, as long as it is carried on intelligently, honestly and in a temper which leaves nothing to be apologized for in the method in which it was undertaken. (Great applause.)

Now, Mr. President, I thank you for the compliment of being invited to be present in this particular capacity. It is very delightful to be among the "wax works." Last year I sat over under the second lamp, over *there*. I don't know, but I had as good a time as I could possibly have. I have recollections to that effect. But, of course, to sit up here, and be able to look you all in the face, is something of a feast in itself. (Laughter.) It is a feast of reason, too, to listen to the speeches which have been made preceding me. And as to the flow of soul, Frank Moore attended to that, so I have been nicely taken care of.

I thank you again for the compliment. (Applause.)

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Speech of Dr. Stryker

THE TOASTMASTER—There is a God who lives and loves; one God, one law, one element, and one far off divine event through which the whole creation moves. Dr. W. M. Strycker.

GENTLEMEN OF THIS LARGE BRIGADE—I think so far we have had a rag time from beginning to end. And I am not speaking of the speeches nor the speakers. And I suppose a rag time is a good time. You will kindly refrain from giving any applause while I am speaking—I put that in as a caveat—and reserve it until I am through, when you will all be glad to give it. It is appropriate that I should cite the invitation, the cordial invitation under which I am one of your elect guests. Your honored president told me that he would be glad to have me one of the objects of your courtesy tonight, and to make a few remarks. And I accepted that, both as a discreet caution and a most delicate compliment, because I am one of the few persons who can make a few remarks. And I have noticed in my little experience in listening to after dinner speeches that most of them, most of the speakers, are greatly gifted with a genius for elaboration. If you have had the privilege of hearing any of the United States Senators speak lately you can understand what the reactive or reflex effect is of living in a legislative body that has no cloture.

Your president has kindly promised to pull my coat tails at the end of ten minutes, and Colonel Payne said he would not; so I can take my choice. The greatest master we ever had in this land of brevity was that man whose birthday recurred last Sunday. (Applause.) It is very easy to talk an hour, and very hard to talk five minutes and say anything. He could do it. I have wondered why there has not yet been developed, or entered, a patent for stopping runaway speakers. It is high time. I have seen very few presiding officers at dinner tables who have what I call the courage of the gavel—which you might call the gravel of the gavel. But if I had the President of the United States speaking, and I was the presiding genius of the occasion, and he was called to speak twenty minutes, down he would come, or I would go out by the feet, when his time was up. Has six minutes gone? (Laughter.) Not quite. Well, of course, you have dined well, and you are prepared for the worst. I cannot compete with language of the brilliancy, and so classical, with our friend from Philadelphia. I think it was an unjust remark that our friend from Wisconsin made about that town. It evidently is waking up. And I cannot compete with the happy phlegmatism of our friend from Wisconsin. Not at all. And I would not pretend to say which of those men I thought was the best. I am like a friend at college, who was asked if he would please name the major and minor prophets. He said he was not prepared to make any such invidious distinction. (Laughter.)

You could fill a book with what I don't know about paper. If I were to attempt to talk about the history of paper from the old papyrus days of Egypt 4,000 years ago, I would be like some foolish ministers who preached to sailors and attempt to rig ships—it never comes out very well.

BUSINESS IS NOW BEING SOCIALIZED.

This dinner, my friends, is an illustration of a value which we have either discovered or invented of socializing our business. Don't be afraid of any sound that there is in that word. You know they say that diplomats get together better at a breakfast than at a council table. It certainly is true that the more we appreciate our mutual needs, and our common past in business or in anything else, the better off are we. It is a sign of public unity when great organizations like this gather men from all over the country to look into each other's faces, whether they come from the Connecticut River or from the banks of the Escanaba. It is a great thing, indeed, that we come to understand each other better the world through; for us, inappositely I couldn't see why, Mr. President, you quoted Tennyson. We have got to believe at last in the solidarity of mankind. That does not mean politics, my friends. I am not going off on any side shoots unless I be shot, and I do not intend to get this crowd against me if I can help it.

Gentlemen, your business is at the bottom of the civilization of the world. No books, no literature, no letters, no bonds, no Presidental messages, no tariff bills, no history, no Bible! Really you are at the base of all structure. We would not have any record or knowledge of what we are if it was not for the men who are making the stuff upon which that record is written. You did not appreciate that you were such great apostles of civilization as that. But you are, and your business is something a great deal bigger than simply to make money. I think there is a great parable in your gathering. What is the rag and tag of things, and the making it; in fact, that fair page that shall contain the idea and the purpose, the document and the deed, of the world? That parable lies in such a phrase as the regeneration of the rag. I am sure that we should see that parable—and I am nothing but a preacher—excepting that it is the frazzled and faded condition, the wastage and left-over stuff of the world, that is to be made into the paper and the pulp upon which the world shall write its thought and its lesson. If I stray not too far from this occasion, or from your thoughts, let me speak of some things of which my mind has recently been very full.

HIS IDEA ON SOCIALISM.

I want to say in about fifteen words or more something about socialism, which is, as you know, the general idea that for the world's weal all the world's wealth is to be redistributed, with or without compensation, with or without law, with or without force—that there is to be a redistribution; and in the main, I think, in travesty of the word democracy, this is to be done. To my mind it is as fatuous as thinking that if you just give a new deal to the old gamblers everything will be equalized. Another thing that I have been thinking about is the philosophy—perhaps some of you have been thinking of it, too, and thinking a little of Frederick Nature, lately dead—a philosophy that rested upon the naked idea of power, the activity of will; will for Will's sake, without consideration of means or end, and which emphasized the great solecism that all the rank and file of the world exists simply for a select and a small minority of the strong. Both failed. Why? One reason was—and see to it, good friends, that you are not contributing to that heresy—one reason was because our time, and I am not stigmatizing, I am not what they call a pessimist, but that the measure of our time is so far gone toward interpreting life in its beauty and its depth by more material things, and spelling, as someone in this town long ago said, success with all the s's barred with dollar marks. And the other philosophy of which I spoke is the idea of the unity of the individual and the emphasis of his own activity, the good of all men to the contrary notwithstanding. (Applause.)

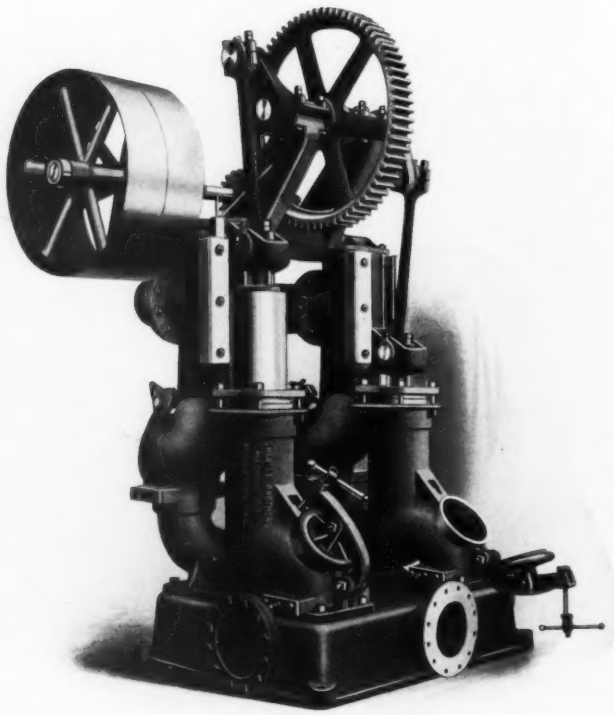
Now the philosophy of socialism, or the philosophy of crude, cruel, raw power, this superman, one of those heresies will be written into the Bible of the world's future unless men who are here caring for business, and pushing it, care for more than business, and have a creed that shall meet all that is true in either such thoughts falls in battle and with pencils of life write human love, individual freedom and power for truth's sake, and not for power's sake, upon the tablets of the future.

THE TOASTMASTER—This, gentlemen, ends the evening's proceedings until the next year.

The diners then filed out of the banquet hall.

The souvenir of the banquet will likely remind the diners of a very happy event for some time to come. It was a memorandum pad with chained pencil attached. A roll of paper encased in brass surmounted a 12 inch board. As used the paper is drawn beneath a brass holder at the end of the board or pad and torn off. The idea is unique and the appliance both attractive and serviceable. The ices were served in miniature news rolls, with all the labels and markings used to indicate the contents of a supposedly original package.

SIZES: 7x16, 8x18, 10x20



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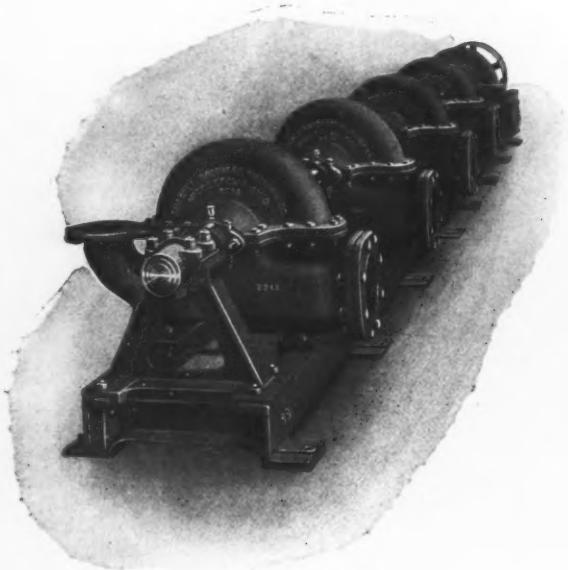

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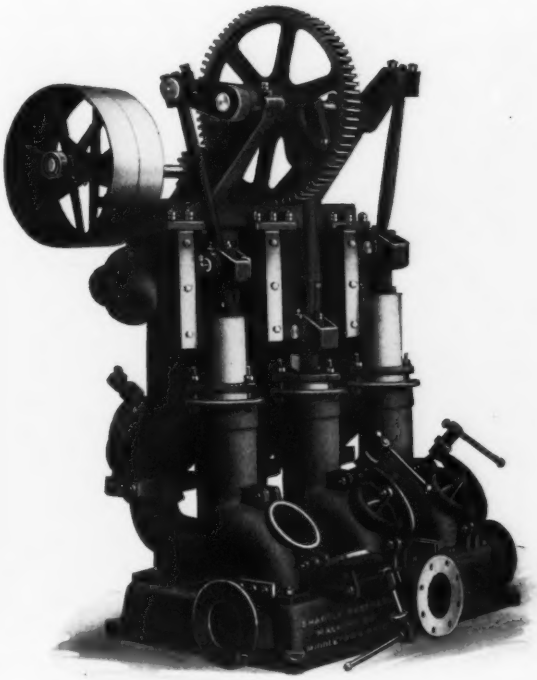

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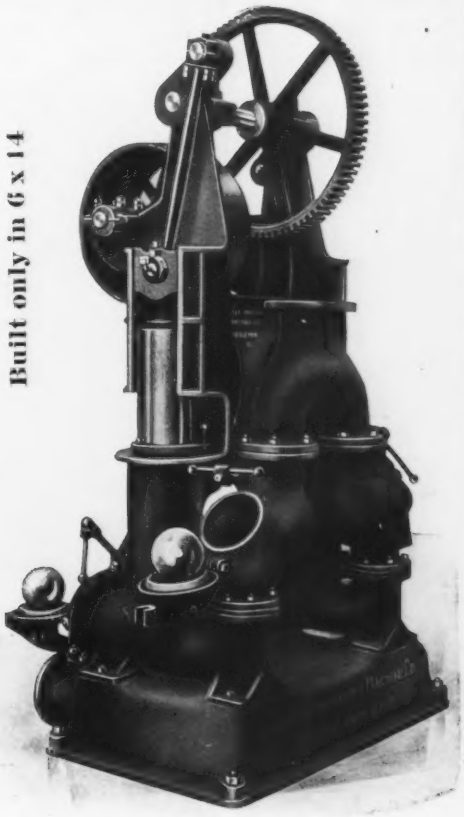

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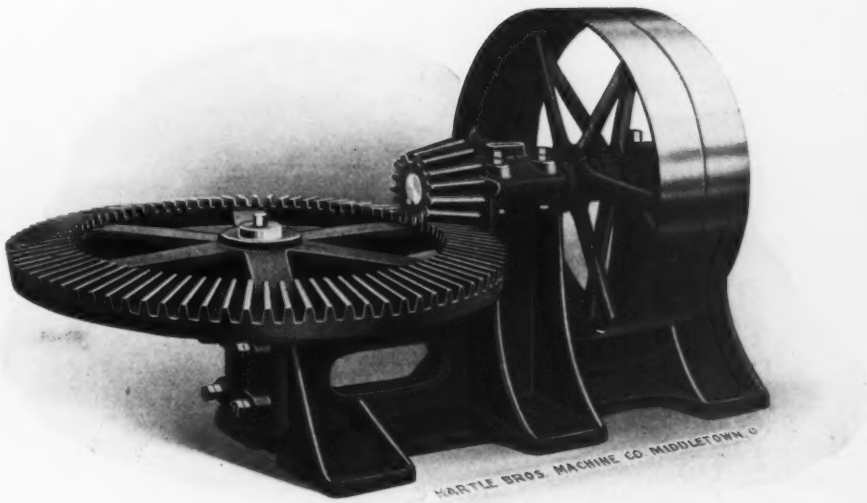
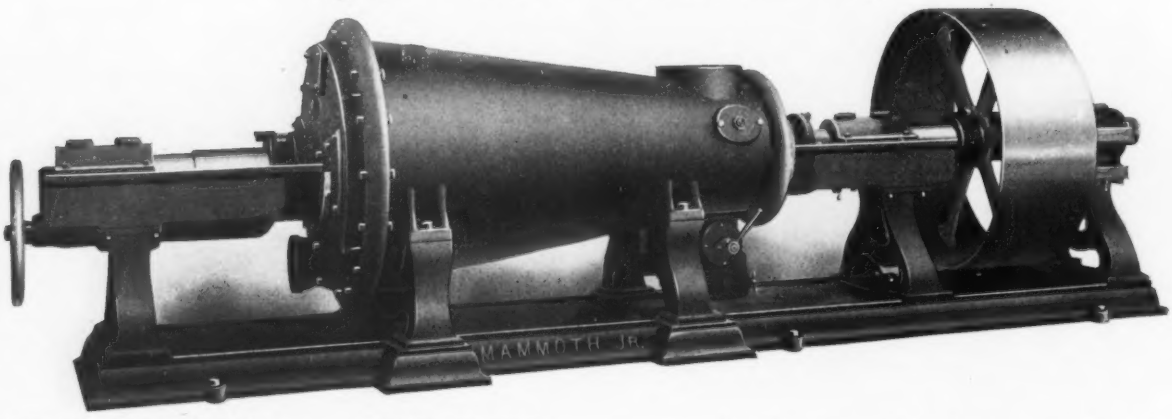
The hub of the bevel gear in our design runs in an oil well which is so arranged that all the weight is carried on the top bearing.



THE NOBLE & WOOD MACHINE CO.

HOOSICK FALLS, N. Y.

Paper Mill Machinery



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Various styles of filling to meet all mill conditions.

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Stuff Chests
Duplex and Triplex Stuff Pumps
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Pin Dusters
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LEATHER BOARD MACHINES.

Variable Speed Friction Drives
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Roll Bars
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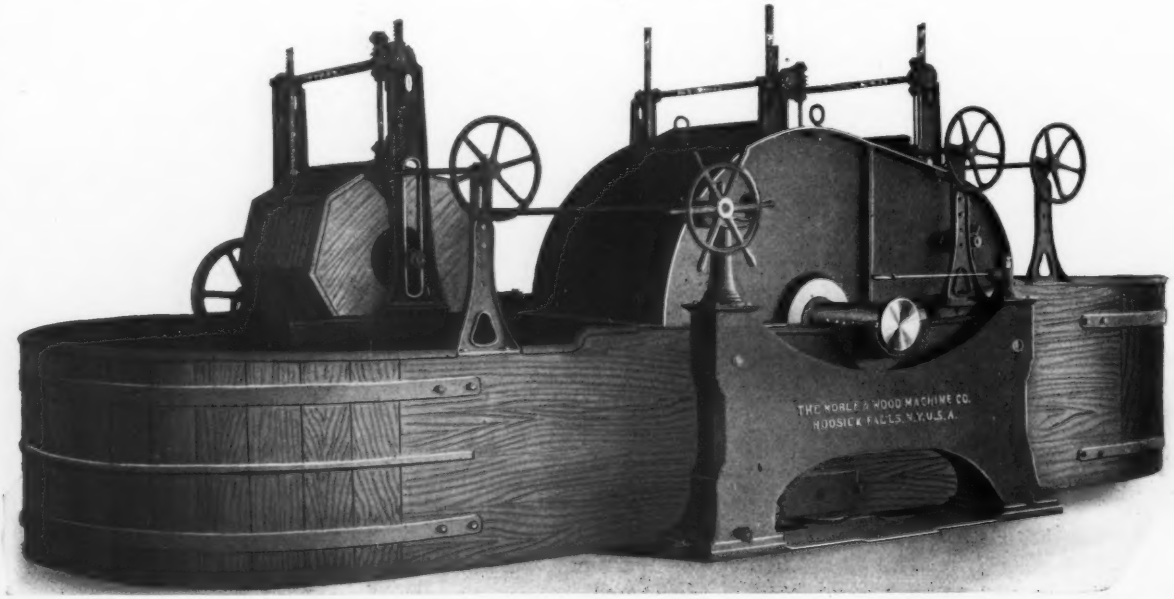
"BULL DOG GRINDER." **For ROOFING or LEATHER STOCK, or any other VERY ROUGH STOCK where a Jordan is not suitable.**



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D—A. B. Daniels, John A. Davis, W. L. Davis, W. O. Day, W. M. Dear, C. W. Dearden, J. C. De Coster, Lieut. Eckford C. de Kay, Dr. Edw. B. Dench, H. L. Derby, Col. W. S. Dewey, John R. Dewitt, Albert Diem, Adam Dingwall, H. T. Disbrow, Hon. John A. Dix, Chas. T. Dodd, C. H. Dodd, C. T. Dole, Wm. T. Dole, D. H. Doremus, David M. Drury, A. E. Dubey, C. L. Duval, Mr. Dwight.

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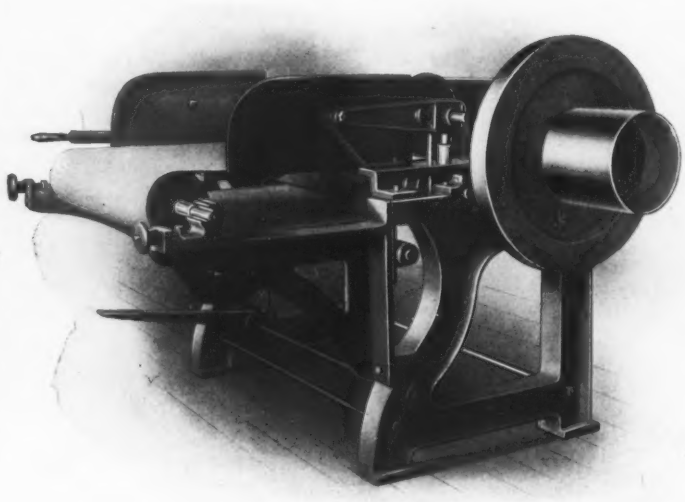

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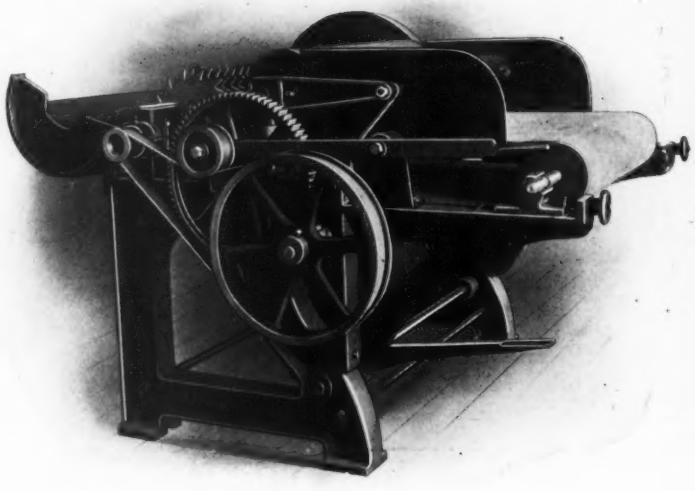

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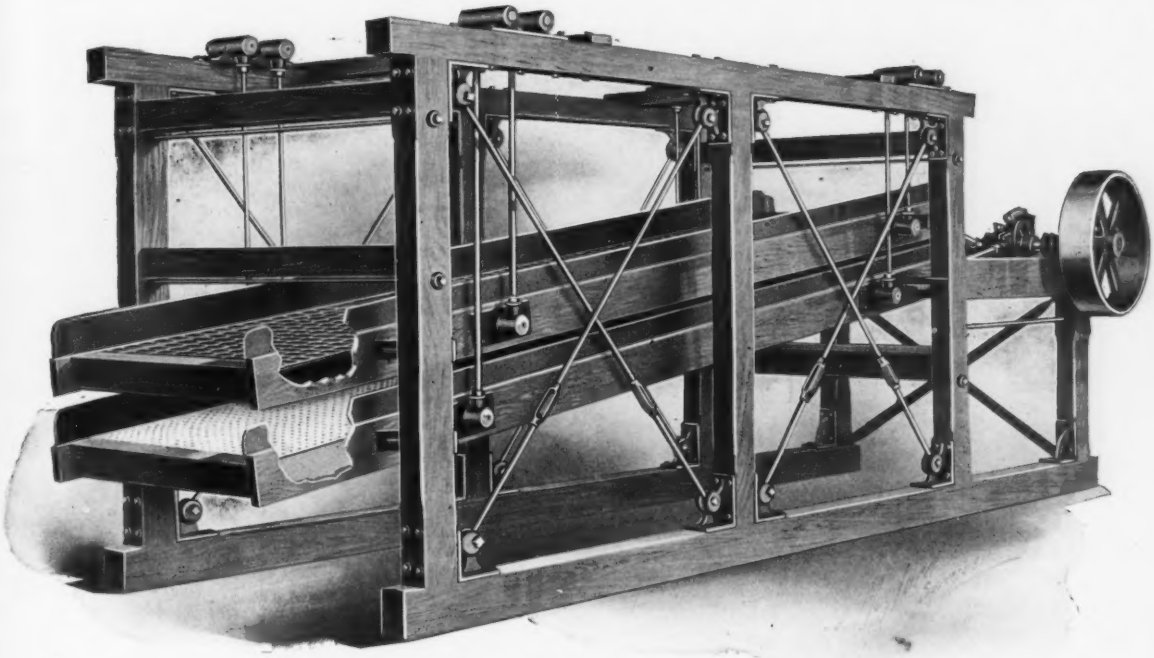

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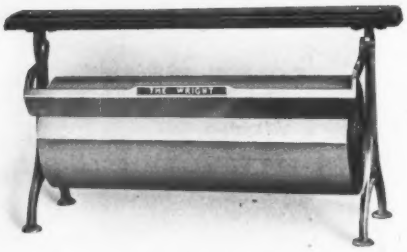

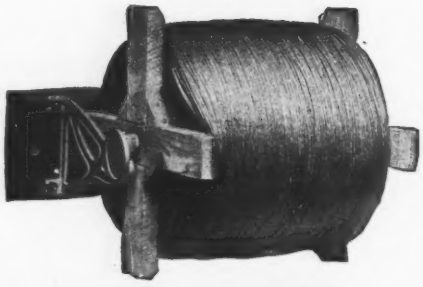

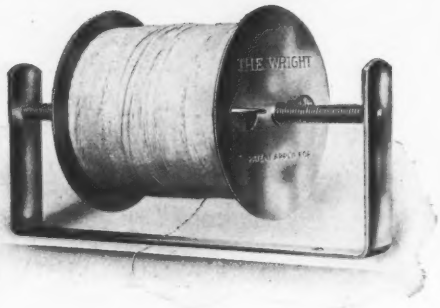

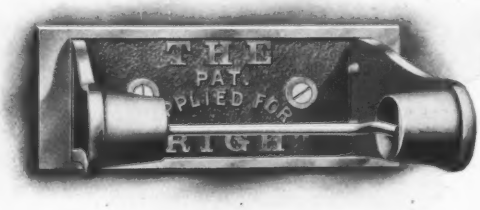

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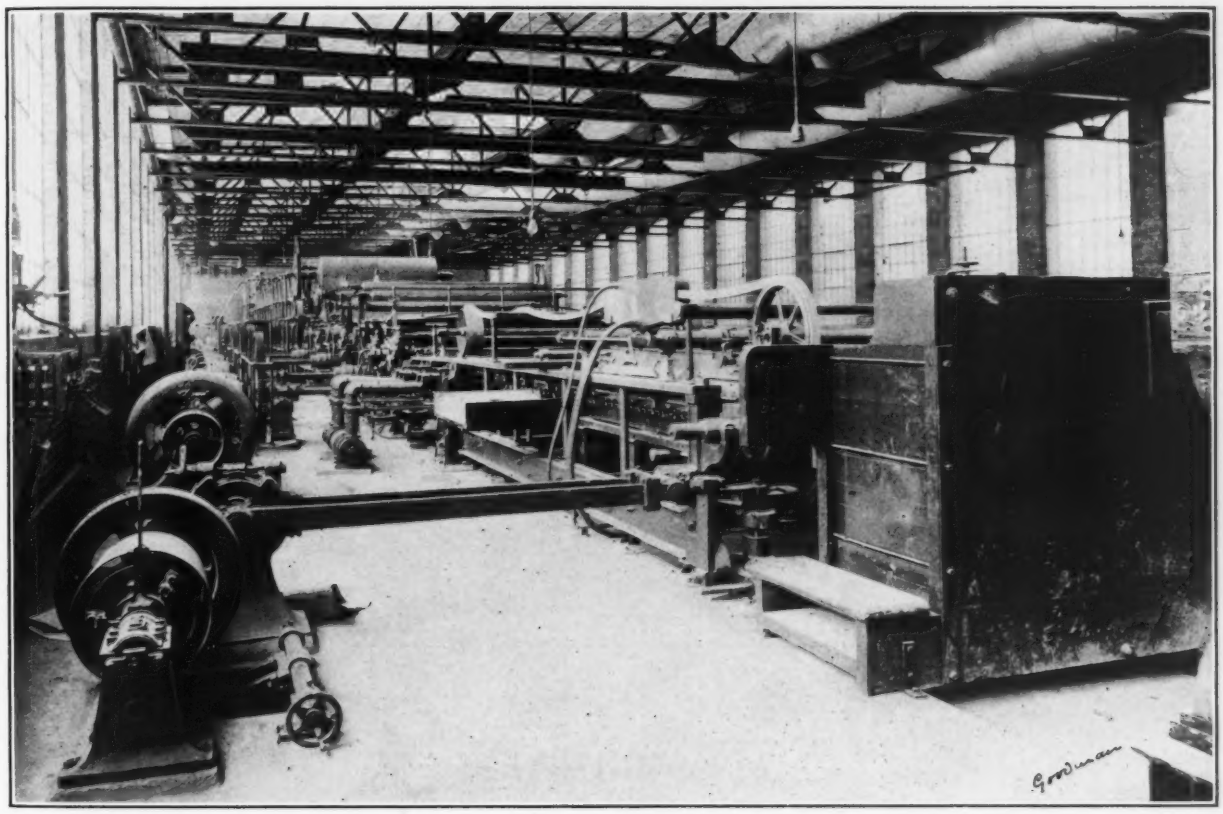

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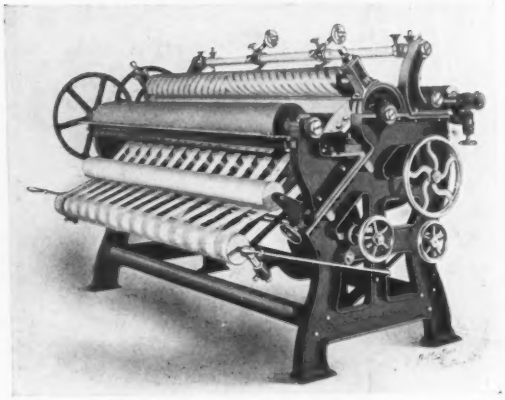

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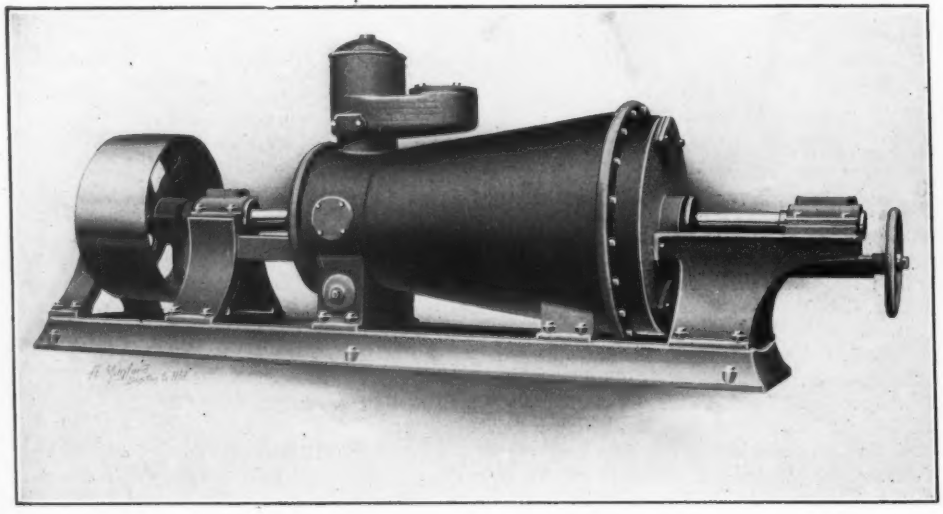

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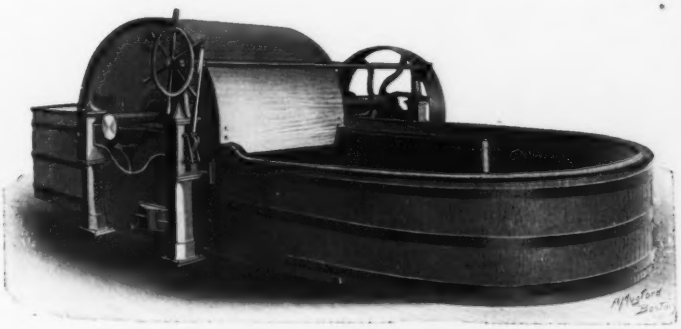

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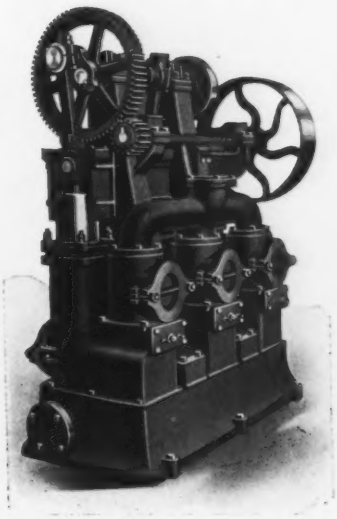

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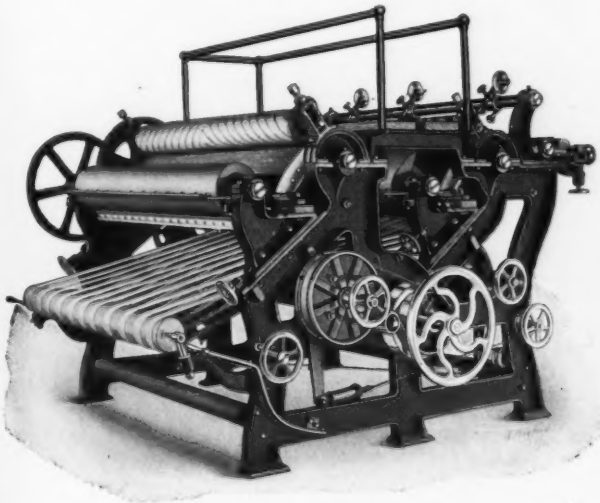
PATENT TRIPLEX PUMP



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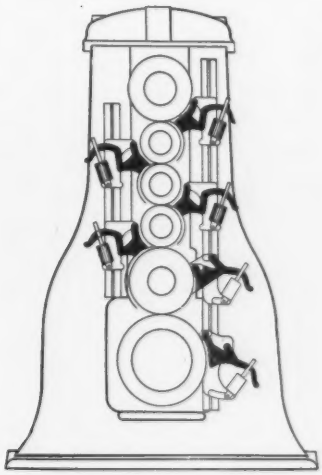
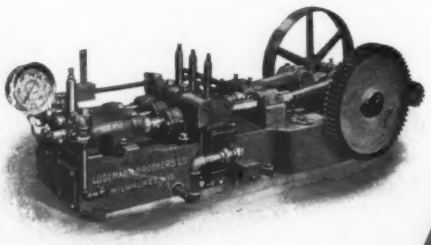
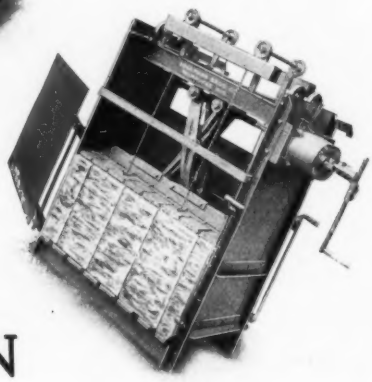


THE DILLON IMPROVED CALENDER
DOCTORS AND FEEDS





LOGEMANN

IMPROVED

Steel Constructed

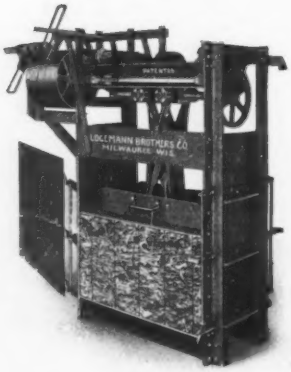
Baling Presses

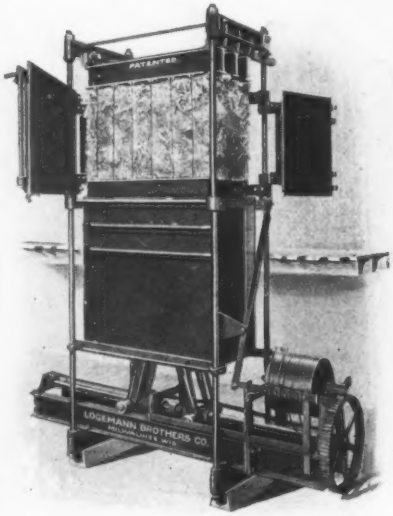
OVER 30 STYLES

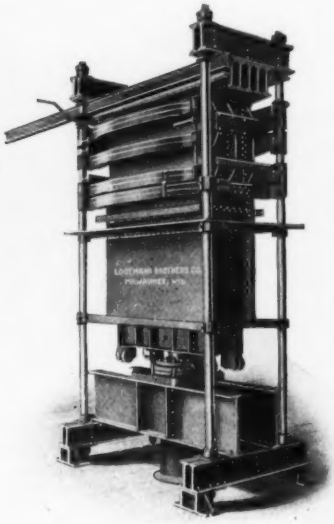
Suitable for all Purposes

WE GUARANTEE TO SAVE

Time—Labor—Power







Hydraulic Presses
Shaft Straighteners
Broaching Presses
Wheel Presses
Bale Presses
Stamping Presses
Double Crank Presses
Cutting Presses
Filter Presses
Embossing Presses

LOGEMANN BROTHERS CO., 297 Oregon St., MILWAUKEE, Wis.

Seventh Annual Meeting of the National Paper Trade Association

THE seventh annual meeting of the National Pap r Trade Association of the United States was held at the Hotel Astor, New York, on Wednesday of this week. The meeting was called to order by President E. U Kimbark.

Two sessions were held during the day. At the morning session the reports of the officers and representatives of the constituent associations were read. In the afternoon there was a general discussion on trade matters and also on important matters suggested by the topics treated of in the papers read.

After the reading of the minutes of the last meeting President Kimbark read a report.

President Kimbark's Report

President E. U. Kimbark read his report, which follows:

GENTLEMEN OF THE NATIONAL PAPER TRADE ASSOCIATION—On this the open- of our seventh annual meeting, it is my duty as president to briefly recall what has been accomplished in the past, and bring to your attention such matters as seem worthy of your consideration at the present time.

Each passing year has more clearly demonstrated the wisdom of our organization and the necessity of its existence. As we review the period since our formation we are brought to a realization of the positive advantage it has been, and the trade is under never-ending obligation to the Paper Association of New York City, through whose effort and foresight our national organization was accomplished. With the increasing complications of conditions, and the growing complexities and burdens of our trade, I dread to think of where we might have arrived had not our association been organized when it was. Had we accomplished nothing else, the value of the universal acquaintance that has come between us, with its resulting good will and fellowship, is beyond my ability to appraise.

E. U. KIMBARK,

President National Paper Trade Association.

TO BETTER CONDITIONS THE ASSOCIATION'S PURPOSE.

Education toward better conditions in the trade has always been the real purpose of this organization. We have made great progress in the betterment of local and general conditions with reference to smaller matters and methods, which are necessary parts of our business. We are, however, still too close to the ground. We do not take a broad enough view of the situation; we are still inclined to grab whatever business there may be in sight, without questioning or knowing whether it pays a profit. We need further reformation along this line—our greatest efforts should now be concentrated on the question of profit, with a big P. With many of you I believe that the work of our cost commission is the most important thing we have undertaken. It is a vital question. As a trade we are not alone in the cost analysis problem; others are hard at work on it. You are all familiar with the efforts of the printers along this line, and the benefit they have already secured. We should continue to assist them in their efforts; what is to their advantage must surely be to ours also.

At our second annual meeting, in 1905, which was one of our most successful and influential conventions, much was said on the subject of expenses and profits. It was shown that expenses had been steadily increasing for ten years, with profits decreasing, and that it was absolutely necessary to secure a higher percentage of profits and do away with many expensive customs and abuses, in order to keep pace with the increase in expense. It was shown that the demands of our business would become more burdensome and expenses continue to grow heavier. Has our experience in the last five years disproven this? We have been able to improve some of our business methods, but have we succeeded in raising our percentage of profits to a very appreciable extent? We are entitled to, and should make, as a trade, not less than 5 per cent. net profit on our gross sales; a business of $1,000,000 per annum should net a profit of $50,000 minimum, and as much more as ingenuity and ability can create. A thorough knowledge of the cost of doing business, together with determination to make a profit over and above the percentage of cost on each transaction, will effect the desired result. If we ourselves know our percentages of cost on our various lines, and thoroughly post our salesmen on the sub-

View in
ERECTING SHOP
307 ft. long by 50 ft. wide
equipped with
Two 15 Ton Shaw
High Speed
Electric Traveling
Cranes

The largest and best equipped of High Grade and Machinery for

THE BLACK-HAMILTON,

UP-TO-DATE METHODS

View in
MACHINE SHOP
with heavy tools
270 ft. long by 45 ft. wide
All tools individually
driven by electric motors
and served by
Two 12 Ton Niles
High Speed Electric
Traveling Cranes

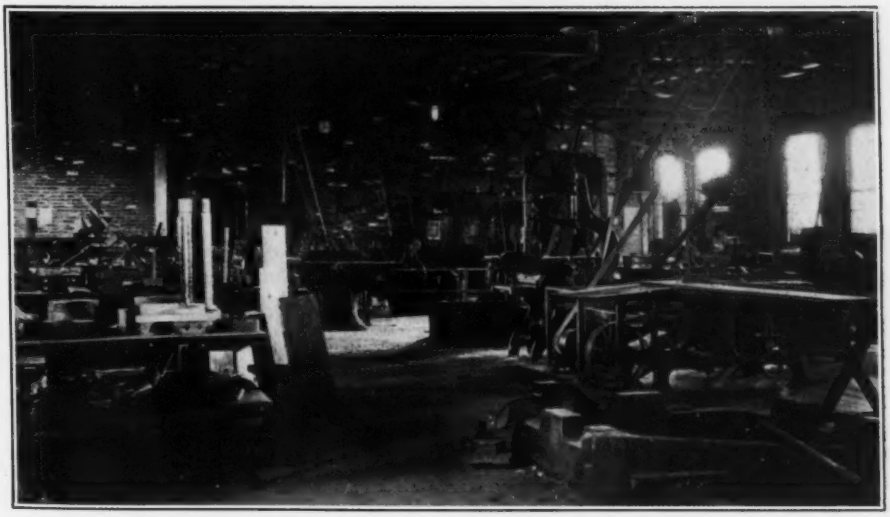
View in
FOUNDRY
255 ft. long by 80 ft. wide
equipped with
Three Niles 15 Ton
Electric
Traveling Cranes
55 foot span, and
Two Whiting Cupolas

Factory Plant for the manufacture

Paper Making Machines
Paper and Pulp Mills

CLAWSON CO.
OHIO, U. S. A.

NEWEST TYPES OF MACHINERY



View in
PATTERN SHOP
85 feet long by 50 ft. wide
completely equipped
and
Tools driven by
a 15 Horse Power
Electric Motor

WHY WASTE GOOD STOCK?

WHEN YOU CAN SAVE IT AT A SMALL EXPENSE BY USING OUR

SCREENING GRINDER "SUCCESS"

It will successfully reclaim and grind sulphite and ground wood screenings into a marketable pulp, which can be sold at a profit.

LIST OF USERS

Jonquiere Pulp Company, Jonquiere, P. Q., Canada
Spanish River Pulp & Paper Company Ltd., Espanola, Ontario
John R. Booth, Ottawa, Ontario
Dells Paper & Pulp Company, Eau Claire, Wisconsin
Nekoosa-Edwards Paper Company, Port Edwards, Wisconsin
Wolf River Paper & Fibre Company, Shawano, Wisconsin
Wausau Paper Mills Company, Brokaw, Wisconsin
Falls Manufacturing Company, Oconto Falls, Wisconsin
Orono Pulp & Paper Company, Orono, Maine

THIS machine is thoroughly practical and durable and fully guaranteed. Easily operated and now running successfully in a large number of the leading mills, making from eight to ten tons of refined sulphite screenings as well as ground wood. It requires no expert and can be handled with the cheapest kind of labor. Occupies floor space thirteen feet by five feet. What we claim for this machine is:

First, **a saving of 50 per cent** in power over any machine now in use on this grade of material. Second, **100 per cent more capacity** than any machine on this grade of material. Third, **it requires less floor space** and no special foundation, as the machine is mounted on a heavy cast iron base, thoroughly balanced and can be set on any ordinary solid mill floor.

These machines have been thoroughly tested by practical men, and we have many testimonial letters from satisfied users, one of which we publish herewith.

ESPANOLA, ONT. (Canada), Oct. 11th, '10.

The Appleton Machine Co., Appleton, Wis.

Gentlemen:—In reference to your machine which you furnished us about eighteen months ago for the purpose of refining our screenings from our ground wood mill. Are pleased to advise you that this machine has been in continuous operation during the past eighteen months and that it has given us excellent satisfaction. We remain, yours truly,

THE SPANISH RIVER PULP & PAPER CO., LIMITED.
By A. E. Millington, General Manager.

FURTHER INFORMATION WILL BE GLADLY SENT ON REQUEST

APPLETON MACHINE CO. APPLETON, WIS.

ject, we will be certain to make higher profits in the future.

SHOULD CARRY A DEPRECIATION ACCOUNT.

Incidentally, in connection with the question of cost and profit, do we ever stop to think that the average man engaged in the wholesale paper trade ought to carry a depreciation account on himself? It is just as necessary for the most of us as it is for the manufacturer to carry a depreciation account on his plant. A percentage of depreciation should also be charged against our merchandise and our receivables—did we ever know the time when they all proved to be good?

We must get over the idea that the cost of doing business is a confidential matter. We all doubtless remember that when the idea of the interchange of credit information was first promulgated it did not meet with popular approval; it is today universal, and not only customary but necessary. I believe that if one set of auditors, using one system as a basis, made an investigation of the cost question in all our leading establishments, the variation of percentage would be slight. Experience in other lines has shown this to be true, and I believe it is correct. There are secrets in every establishment which should be jealously guarded, but I cannot think that percentage of cost is one of them. It must be true that correct and general information on this subject must lead to a legitimate net profit, and easier justification to our customers, if necessary, of the prices we feel compelled to demand.

It may be argued that publicity of this kind would make to the advantage of the newer and smaller concerns, whose percentages of expense are smaller than the older and larger establishments. This argument answers itself; the expenses of the smaller houses are sure to increase if the business grows, and it is certainly for the general good for them to know what they are coming to in this direction, in order that they may figure their percentage accordingly. There has been a more or less legendary belief that the jobbing cost of all lines of merchandise was about 10 per cent. How or when this idea originated I do not know. It is an old theory which may have had some foundation in fact twenty-five

W. C. RIDGWAY,
Corresponding Secretary National Paper Trade Association.

years ago, but it has been a costly delusion for some time. Today the jobbing cost of all business is nearer 20 per cent. than 10 per cent. If percentages of cost were a recognized fact in our trade, would not our customers, as well as the bankers and manufacturers, look with distrust upon concerns who continue to offer goods at rates which do not cover the cost percentage or show a profit? The day of guesswork in selling prices has long since passed. If we are compelled to sell at prices no higher than our competitors, is it not more necessary that our competitors' rates should be based upon a correct and substantial basis of cost?

I quote from an article recently published by the Chicago Credit Men's Association: "A really scientific cost system becomes more

JOHN LESLIE,
First Vice President National Paper Trade Association.

valuable as it becomes more universally understood and applied, and may be the indirect means of lifting an entire industry up on to higher levels, where competition stimulates trade instead of strangles it."

SHOULD STRIVE TO BETTER CONDITIONS.

Aside from insufficient percentage of profit, for which I believe ourselves responsible, there are many conditions which combine to make the jobber's vocation burdensome, and which we should continue our efforts to eliminate. We must not overlook the ever-present problem of credits and terms. There should be more co-operation between the manufacturer and the dealer. Direct sales should be confined to what is legitimately mill business. A manufacturer should not be friendly to jobbing interests in one section and antagonistic in another. We should carefully avoid overproduction and duplication of lines and grades, and reduce to a proper minimum the items and varieties which we carry in stock. We should eliminate from our stock those items which are small sellers, and for which something else would answer the purpose. I do not believe that we should attempt to provide for every possible inquiry or requirement—a reasonable amount of waste is economic.

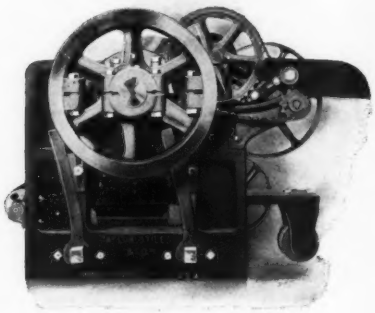
The tendency to overproduction of paper is not, in my opinion, confined alone to variety, which is, perhaps, to the disadvantage of both dealer and manufacturer. This is a feature which I trust may hereafter receive that consideration which its importance warrants. I am forced to believe that the increase per capita in the consumption of paper will be not nearly as great in the next ten years as in the past. With an increase in population of only a trifle over 2 per cent. per annum, the increase in the production and use of paper, particularly for printing and wrapping purposes, has greatly exceeded that figure. Modern methods of printing and illustration have revolutionized the methods of selling goods, and the ten years just past have witnessed an increased consumption of paper for these purposes at a rate which cannot, probably, be maintained. Without being pessimistic on the situation, I feel that we are today doing business at about a normal rate, and that

Compare the Machine

This is the

No. 11 "GIANT"

Rag Cutter



IT is the strongest and most heavily built machine on the market. All iron and steel—no wood—not even a wooden trough. Weighs 8,000 lbs.

The main bearings are 11 x 5⅜ in. Webbed balance pulleys on each side. Small bearings graphite bushed.

The main shaft is of 6-in. hammered steel—*not* cold rolled or "hot" steel. Each shaft is a perfect forging.

Automatic quick release allows instant disengagement of any obstruction, such as a tool or piece of iron accidentally dropped in. The knives will cleanly cut a wrench or bolt—but that isn't what they are for!

Knives of "Taylor-Stiles Quality," known for 45 years as the standard. We make knives to fit every known make of machine, and for any special requirements. Ask us about them.

with What It Will Do

It Will—

—cut *finely* from 3,600 to 4,000 lbs. per hour.
—give 8,400 cuts per minute, at 700 R. P. M.
—run easily and smoothly.
—cut roofing and felts as no other cutter can.
—cut any fine-cut stock, as no other cutter can.
—do the work of two *ordinary* cutters.

It Will Not—

—keep you "in the hole" on repairs.
—break down and tie up the work.
—waste power in unnecessary friction.
—use as much power as machines of very much lower rated capacity.
—cost you anything to get full information, and you can't afford *not* to have it.

TAYLOR, STILES & CO.

Riegelsville, N. J., U. S. A.

Canadian Manufacturers Under Patents
WATEROUS ENGINE WORKS CO.
Brantford, Ont., Can.

Western Agents:
THE WILLIAMS-GRAY CO.
162 Washington St., Chicago, Ill.

THE HILL CLUTCH CO.

Power Transmission Machinery

FOR

PULP AND PAPER MILLS

Hill Collar Oiling Bearings

Rolling Mill Type

Drop Hangers

Pedestals

Post Hangers

Rigid Floor Stands

Sling Hangers

Turned Steel Shafting

Couplings

Collars

Hill Friction Clutches

Rope Drives

Pulleys

Water Wheel Harness

Agitators

Stuffing Boxes

Belt Tighteners

Quills

Gears

Sprockets

SEND FOR NEW GENERAL CATALOG No. 9—JUST ISSUED

It contains complete data upon all subjects pertaining to the mechanical transmission of power by belts, ropes and gears.

THE HILL CLUTCH COMPANY, Cleveland, Ohio

NEW YORK OFFICE, 50 CHURCH STREET

the increase in the paper trade the next ten years will not largely exceed the percentage of growth in population.

This is only an opinion and not a prophecy, but we have been so long accustomed to a very substantial addition to our annual tonnage that I am compelled to believe we are doomed to disappointment if we anticipate the same rate of growth. If this opinion is somewhere nearly correct, is it not an additional reason why we should now analyze the question of profits more carefully?—realizing that our future depends not so much upon the increased business of the future, but upon that which we already have. I believe that the publication in our trade journals of statistics of production and consumption, with a careful analysis of causes for increase and decrease, would prove of value. With the exception of farming, there is in this country scarcely an industry of any magnitude in which overdoing is not evident. Paper manufacturing is not the only line that has outdone itself. As a partial result of this general condition, stocks and bonds have been overproduced, and Wall Street has been Wail Street for so long that we are getting accustomed to the sound. I would not so much decry what is ordinarily known as the extravagance of the American people as I would criticise the extravagance of the American business men and manufacturers who continue to overdo and overproduce. Instead of devoting our energies to keeping facilities so far ahead of requirements, would it not be better if we used greater endeavor to produce more satisfactory results out of what we have?

Don't Keep on Predicting Hard Times.

The most certain way to bring about hard times and bad business is to keep on predicting them. Business condition, like health, is largely a state of mind, and so long as we overdo in business we shall have with us the bugaboo of hard times ahead. We are the only nation to which normal conditions bring uneasiness and unrest in commercial life. We seem to have an inborn desire to exceed the speed limit. Frequently during the year past we have heard from financial circles that it was a good time to be conservative—I believe that a good time to be conservative is all the time, and that we must not continue to overestimate the future. I am not pessimistic as to the commercial future of this country, and do not wish to be so understood; on the contrary, I am optimistic; and, knowing the tendency of recent years, I have but little sympathy with the business men who cry panic and hard times when they find themselves, for a period, doing business under less than a full head of steam.

As a trade we should be grateful for the personal interest which has been shown in our association by many of our busiest men. As a trade we have need to support the National Paper Trade Association, and the association has need of the continued support of the trade—we are a distinctly mutual organization; the more you do for us the more we are able to do and will do for you. As has been said here before, you get out of an association benefits in proportion to the efforts you put into it, and in benefiting yourselves you at the same time benefit others. Officers of an army or officers of an organization can advance only when followed by the rank and file.

Recent years have witnessed the development of local commercial associations, organized for the mutual commercial and civic welfare. They have produced in their communities a spirit of co-operation and team work before unknown. In those localities where this modern commercial spirit exists, competition, while still the life of trade, is largely co-operative. As a national trade organization we cannot do much in a civic way, but we are bringing competition and co-operation more closely together. Co-operative competition guarantees the life of our trade. Prosperity of a nation, a city, a community, or of a trade, is founded not upon the success of an individual, or of a few, but upon the welfare of the whole.

In preparation for this meeting I have spent considerable time reviewing proceedings of the meetings held before, and I am impressed with the wisdom and foresight of many of the addresses that have been made at these gatherings. I wish it were possible to publish in a condensed historical form much that has been said and done. It seems to me that some of the best thought we have has been expended for our benefit. These beacons of our history should not be forgotten, but kept bright in our memories for our guidance and inspiration.

Report of the Corresponding Secretary

Corresponding Secretary W. C. Ridgway then read the following report:

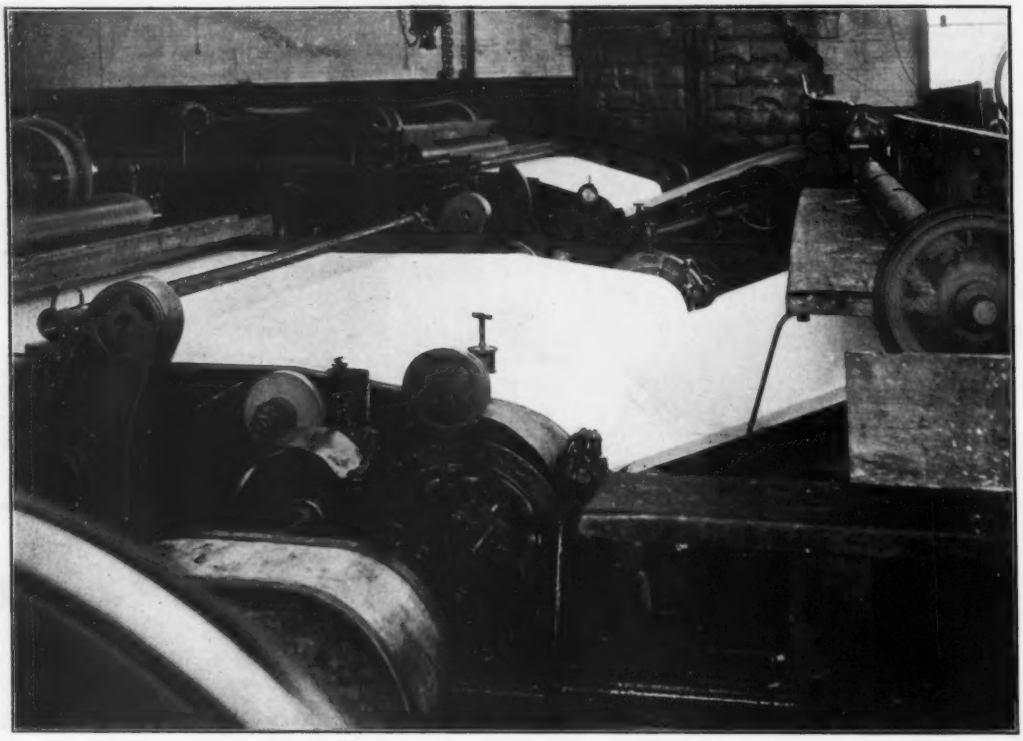
Gentlemen—The publication of the Bulletin serves at least one

E. E. Wright,
Second Vice President National Paper Trade Association.

good purpose. It removes the necessity of your listening to a dry recital of the doings of the association for the last six months. It is sufficient to say that the individual membership of the association is 186, as compared to 188 at the time of the summer meeting. This decrease of two is accounted for by the loss of one member each by the Baltimore & Southern and the New England associations. There seems to be no good reason why this association should not have an individual membership of 250, and it is suggested that the local associations appoint membership committees this year to wage a vigorous campaign with that object in view. It can be done if a determined effort is made.

Begins Its Eighth Year.

With this meeting the association enters upon the eighth year of its existence. Organized seven years ago this month with an individual membership widely scattered over the country, the association was not prepared to undertake reforms which depended largely upon the existence of mutual confidence among its members. Consequently, for the first five years, the activities of the association were directed toward the abuses which did not depend for their correction upon mutual confidence. These abuses were found principally in the relations of the jobber with the manufacturer, for such abuses were common to all parts of the country and all could unite to bring about their reform without the slightest feeling that a competitor was being aided. Within the past two years subjects which are related more particularly to the relations of the jobber with his competitor and with his customer



DECEMBER 30, 1910.

The List Below of the Millspaugh Patent Suction Rolls

for Fourdrinier Machines is not complete, but sufficiently so for the purpose intended. Date of shipment is given in some cases and date of repeat orders in others. The list begins with the first installation made the Monday after Christmas, 1908, on a 96-inch machine at the mill of the Hammerschlag Mfg. Co., Garfield, N. J. Subsequent orders of this customer, as well as others, follow under the firm name for convenience sake:

Date	Size Machine Inch	Customer
Dec. 27, '08....	96	Hammerschlag Mfg. Co., Garfield, N. J.
Dec. 1, '09.....	138	Hammerschlag Mfg. Co., Garfield, N. J. Greaseproof, Waxing and Wrapping.
March 31, '09..	99	Hammermill Paper Co., Erie, Pa.
July 20, '09....	125	Hammermill Paper Co., Erie, Pa.
July 22, '09....	102	Hammermill Paper Co., Erie, Pa. All-sulphite Bonds and Writings. Customer pleased; quality improved; production increased; steam consumption greatly reduced.
May 7, '09.....	60	Monarch Paper Co., Kalamazoo, Mich. Book Papers. Customer pleased; quality improved; production increased.
May 18, '09....	69	Menasha Paper Co., Menasha, Wis. Catalogue, Book, News and Novelties. Production increased; quality improved.
May 27, '09....	90	Monroe Felt and Paper Co., Lawrence, Mass. Roofings, Sheathings, etc. Production increased; quality improved; life wires greatly prolonged.
June 9, '09.....	112	Merrimac Paper Co., Lawrence, Mass. Book and Coating papers. Quality improved; production increased; wider range weights; life wires prolonged 250 per cent.
Sept. 6, '09....	..	S. D. Warren & Co., Cumberland Mills, Me.
March 5, '10....	..	S. D. Warren & Co., Cumberland Mills, Me.
July 2, '09.....	85	Thilmany Pulp & Paper Co., Kaukauna, Wis.
Jan. 25, '10....	92½	Thilmany Pulp & Paper Co., Kaukauna, Wis. Sulphite Wrappings and Novelties.
July 9, '09.....	68½	New York & Pennsylvania Co., Lock Haven, Pa.
July 16, '09....	103	New York & Pennsylvania Co., Johnsonburg, Pa.
Nov. 30, '09....	113	New York & Pennsylvania Co., Johnsonburg, Pa.
Dec. 8, '09.....	113	New York & Pennsylvania Co., Johnsonburg, Pa. Book, Coating and Kraft.
July 24, '09....	76	Kinleith Paper Co., St. Catherines, Ontario, Can.
July 24, '09....	96	Kinleith Paper Co., St. Catherines, Ontario, Can. Book and Writing Papers.

Date	Size Machine Inch	Customer
Aug. 3, '09	110	West Virginia Pulp & Paper Co., Piedmont, W. Va.
Aug. 13, '09	112	West Virginia Pulp & Paper Co., Williamsburg, Pa.
Aug. 31, '09	135	West Virginia Pulp & Paper Co., Mechanicville, N. Y.
Nov. 22, '09	136	West Virginia Pulp & Paper Co., Piedmont, W. Va.
Dec. 18, '09	116	West Virginia Pulp & Paper Co., Piedmont, W. Va.
July 7, '10	92	West Virginia Pulp & Paper Co., Piedmont, W. Va.
Sept. 9, '10	142	West Virginia Pulp & Paper Co., Piedmont, W. Va.
Sept. 15, '10	132	West Virginia Pulp & Paper Co., Covington, Va.
Oct. 17, '10	139	West Virginia Pulp & Paper Co., Mechanicville, N. Y.
Nov. 30, '10	152	West Virginia Pulp & Paper Co., Piedmont, W. Va.
Dec. 13, '10	81	West Virginia Pulp & Paper Co., Tyrone, Pa. The above eleven rolls specified to apply on contract for twenty-one Suction rolls for twenty-one paper machines, is about as good a testimonial as could be had for this device. The shipment of Sept. 9, 1910, of 142 inches was a roll that was returned by one of the largest Central States mills, with the statement that same was unsatisfactory. It works perfectly at Piedmont. Papers made: Book, Coating, etc.
Aug. 7, '09	110	Central Paper Co., Muskegon, Mich. Manila Wrappers, Grease-proof, etc.
Sept. 3, '09	107½	Bardeen Paper Co., Otsego, Mich.
June 8, '10	85	Bardeen Paper Co., Otsego, Mich.
Oct. 26, '10	95	Bardeen Paper Co., Otsego, Mich. Book, Catalogue, paper for waxing, fine light weight bible and specialties. Quality greatly improved.
Sept. 22, '09	102	Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y.
Jan. 20, '10	126	Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y.
Feb. 1, '10	95	Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y.
April 2, '10	88½	Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y. Fine Book papers.
Oct. 14, '09	115	Eastern Mfg. Co., S. Brewer, Me.
Jan. 28, '10	112½	Eastern Mfg. Co., S. Brewer, Me.
Feb. 2, '10	99	Eastern Mfg. Co., S. Brewer, Me. Book papers, Writings, Bonds and Ledgers from soda, sulphite and all-rag stock.
Oct. 21, '09	124	Paul A. Sorg Paper Co., Middletown, Ohio. Jutes, all-sulphite Waxing papers, etc. New Horne Machine. Wires last twenty weeks compared with four to five weeks on former machine, replaced by this one.
Nov. 1, '09	90	Illium Paper Co., Troy, N. Y. Kraft.
Nov. 11, '09	88	Cliff Paper Co., Niagara Falls, N. Y. News, Tablet, etc. Production increased; quality improved. Customer well pleased. Another Roll in process of manufacture Dec. 28, 1910.
Dec. 3, '09	66	Martin & Wm. H. Nixon Paper Co., Manayunk, Pa. Book papers.
Dec. 27, '10	..	Another Roll in process of manufacture. Production increased; quality improved.
Dec. 7, '09	112	Crocker-Burbank Co., Fitchburg, Mass.
June 13, '10	72	Crocker-Burbank Co., Fitchburg, Mass.
Aug. 13, '10	80	Crocker-Burbank Co., Fitchburg, Mass.
July 23, '10	134	Crocker-Burbank Co., Fitchburg, Mass.
Nov. 26, '10	134	Crocker-Burbank Co., Fitchburg, Mass. Book papers.
Dec. 24, '09	94	F. W. Bird & Son, East Walpole, Mass.
Aug., 1910	121	F. W. Bird & Son, Phillipsdale, R. I. Roofings, Sheathing, etc. The first roll was so satisfactory on Fourdrinier machine that a Fourdrinier end, with Suction roll, was purchased for their fine new cylinder machine at Phillipsdale, R. I., changing same from cylinder to Fourdrinier machine.
Dec. 31, '09	136	Fox Paper Co., Lockland, Ohio. Butchers' Manila, Light Board, Kraft, etc.
Dec. 31, '09	75	Jessup & Moore Paper Co., Augustine Mills, Wilmington, Del.
Dec. 31, '09	122	Jessup & Moore Paper Co., Augustine Mills, Wilmington, Del.
Dec. 14, '10	102	Jessup & Moore Paper Co., Rockland Mills, Wilmington, Del. Book papers. Above three rolls apply on contract for six. This installation is worthy of comment for the reason that, due to local conditions not attributable to Suction roll, the rolls were removed. Later reinstalled with a result of third specification above mentioned. Customer well satisfied and production increased.
Jan. 2, '10	93	Everett Pulp & Paper Co., Everett, Wash. Light weight book, Writings, and heavy weight Wrapping. Production greatly increased; steam consumption reduced.
Feb. 15, '10	76	Potsdam Paper Co., Potsdam, N. Y. Hanging papers. Production greatly increased; quality improved; coal consumption reduced. This installation was such that the advantages from power and fuel consumption standpoint were clearly discernible, showing the wonderful possibilities of old paper machines when equipped with Suction rolls.
May 31, '10	108	Grand Rapids Pulp & Paper Co., Grand Rapids, Wis. Kraft. Production increased; life of wires doubled.
July 27, '10	80	Mead Paper Co., Chillicothe, Ohio. Fine book and enamel papers. Production increased; quality improved.
Aug. 15, '10	104	Tileston & Hollingsworth Co., Hyde Park, Mass. Book papers. New paper machine.
Sept. 2, '10	66	William H. Vinton & Son, Brattleboro, Vt. Blottings and similar papers. Production materially increased.
Sept. 22, '10	127	J. & J. Rogers Co., Ausable Forks, N. Y. Sulphite Wrapping papers, light and heavy. Quality greatly improved.

Practically the only real difficulties encountered have been where Pigment colors were used, and the percentage to total production of such papers was too great to economically substitute Aniline colors for same, and in one or two instances with very open sheets of slightly beaten all-sulphite papers, although these latter papers may be successfully made with our later improvements. No trouble is experienced using such stock when same is fairly well beaten. The range of papers successfully manufactured covers everything from News to the finest Linen Writing papers.

More than thirty Rolls are in successful use on Fourdrinier machines in foreign mills. Lack of space prohibits mention of same, and an additional list of nearly one hundred other rolls in successful use on American Fourdrinier and Cylinder Machines.

Full information cheerfully supplied on request.

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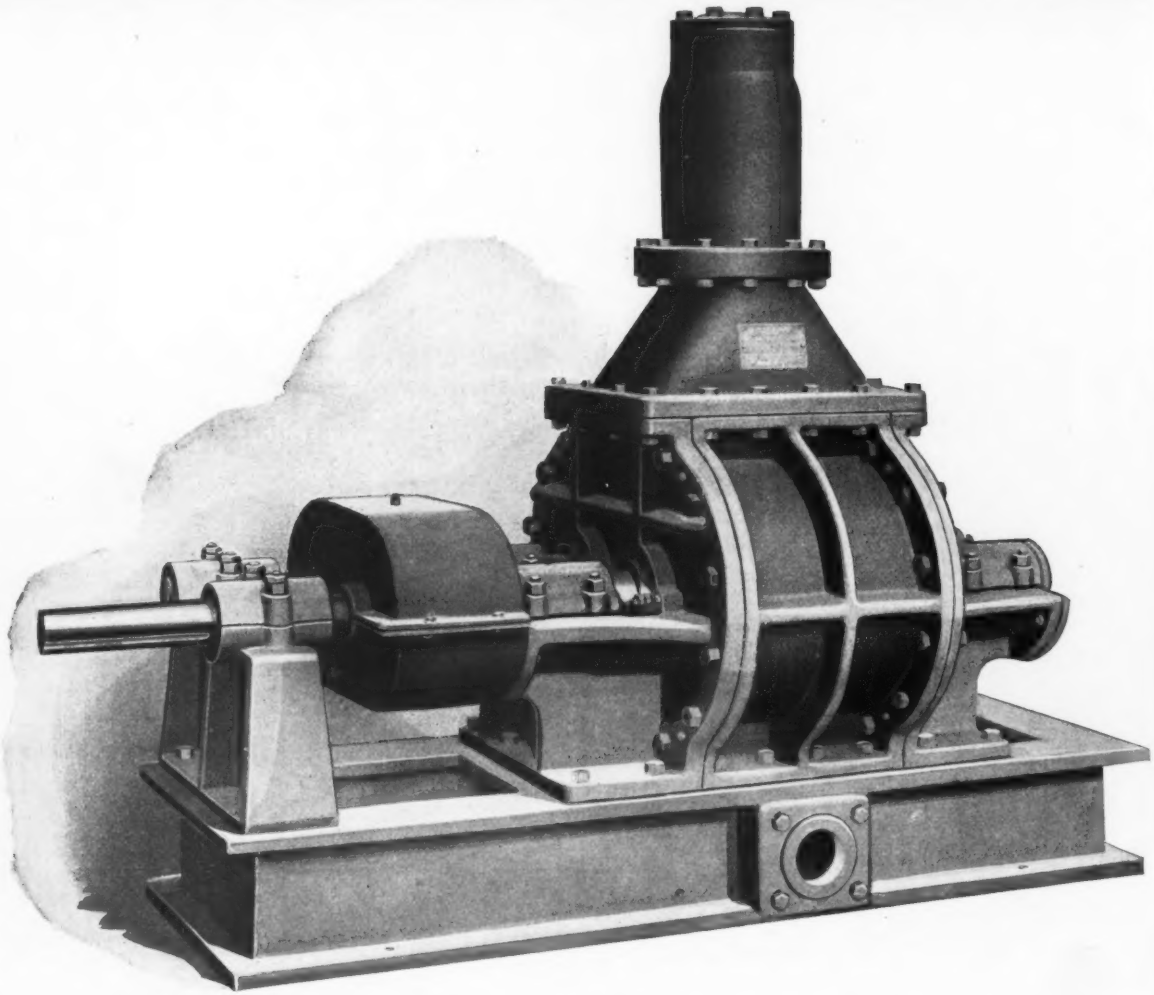

THE illustration above clearly shows the appearance of our large size Vacuum Pump, as furnished for the paper industry. The smaller size pumps are slightly different in construction but proportionately as heavy. We have furnished, with entire satisfaction, a large number of these pumps to the paper industry in America and abroad. Many of them have been used in connection with the **Millspaugh Patent Suction Roll.** A complete line of Blowers for Calenders, Dandy Rolls, drying lofts and any service where a blast of air is required, is also manufactured.

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SOLE DISTRIBUTORS OF OUR PRODUCT TO THE PAPER INDUSTRY

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have gradually been taken up in the meetings. This is undoubtedly due to the increased acquaintance of one member with the others, which is the basis of all mutual confidence. Your worst competitor loses some of his horns when you meet him face to face at these meetings; your attitude toward him changes from antagonistic to tolerant, and even though you may never learn to love him, you eventually reach the point where you respect and are willing to trust him to do his part in any movement for the general good. Whether there exists in this association such a mutual respect and trust is uncertain, for certainty can only be assured through test, and no test has yet been made. It is certain, however, that much could be accomplished for the profit of the jobber if mutual respect and trust did exist.

For example, each of you would unhesitatingly give the association full information as to your percentages of cost of doing business to be used by it for the education of the entire trade in obtaining an adequate profit on all sales; you would not be selling the same article in the same quantity to two or more of your customers at different prices; you would not be asking the manufacturer to fix a price at which you were to sell a particular watermarked or branded paper, you would determine for yourselves what the margin of profit should be and get it; you would adopt a set of trade customs regulating your business with your customers, and, lastly, you would obtain by the force of united effort changes in the manufacturers' trade customs to make them just and equitable to manufacturer, jobber and consumer.

Work of the Cost Commission.

Let us consider these matters more in detail. The Cost Commission has found some difficulty in obtaining figures as to the cost of doing business, even though the giving of the figures asked for would betray no business secrets. Happily, a sufficient number of the members responded to enable the commission to arrive at averages which are approximately correct, but it would have been far more satisfactory if the entire membership had made an effort to obtain the figures requested. The work of the commission has resulted in arousing the members to a full realization of the meagerness of the information to be obtained from the systems of bookkeeping now in use in the trade, and, to this extent, its work has been successful. If the members who have installed bookkeeping methods which will show the percentages of cost chargeable to each particular line will disclose such methods they will confer a great benefit on the trade as a whole and enable the commission to continue its campaign for more adequate profits. It is to be hoped that the discussion today will be only a beginning of a free interchange of experience as to "costs" of doing business.

Modern methods of merchandising, as exemplified in other lines, notably the steel industry, would indicate that in at least one respect the paper jobbing business has not kept abreast of the times. The paper jobber still continues to sell two reams of blank bond or other paper at anywhere from 9 to 10½ cents, depending on what he thinks his competitor is asking for a similar grade. In many instances, when an order is received for blank bond it is necessary before billing it to ascertain what price had been charged this particular customer in the past. In other business it has been found wise and profitable to fix a price according to quantity which will return a proper profit, and to sell only at that price. Competition is no keener in the paper industry than in others where this plan is in daily use; consequently it is submitted that this plan should have your thoughtful consideration. Is there any reason based on the "square deal" why you should sell the same article to two men at a different price? No; one is "easier" than the other, that is all.

The plan of having the manufacturer fix the price at which the jobber shall sell a specific kind of paper is only another way of accomplishing the same result. But why should you ask aid from the manufacturer when you could and should do it yourselves? There is only one thing standing in the way, and that is you are still afraid of your competitor and he of you. Why not get together and do a little something in the way of a fixed price with an adequate profit without the aid of the manufacturer? It can be done.

In Reference to Trade Customs.

Rules and regulations commonly called "trade customs," governing relations between the jobber and his customer, are in force locally in nearly all parts of the country. These should be made uniform wherever possible and adopted by the National Association, or the association should at least recommend a standard set to be worked up by the various local associations.

The customs should fix terms and discounts and should provide

Thomas F. Smith,
Secretary National Paper Trade Association.

for an additional charge for the sale of broken reams and cutting (both paper and cards). If this additional charge were based on the cost of this service no objection would be raised to it by anyone. The only apparent stumbling block, other than a lack of mutual confidence, is that some large jobbing houses are not members of this association and would take advantage of any such customs; but in spite of this, it is predicted that if the customs drawn and adopted were just and equitable and each member lived up to them to the best of his ability, these outsiders will be following them within a year. Why? Because they will turn a loss into a profit. Is this not the reason the paper manufacturers have observed the trade customs adopted by them?

The fact that trade customs are a source of profit to the manufacturers is not the real objection to them. The jobber has no wish other than to see the manufacturers prosper, and any reasonable and just regulation which will enable him to make a little more money will not be opposed. The real objection is that they are not based on "justice." They attempt to legalize something which is neither just nor reasonable. Is there any reason, except that it would change existing methods, why the present plan of paying for paper at the ordered weight, if the weight of the paper and the wrappers comes within a certain percentage thereof,

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should not be abandoned and one substituted which would provide for the payment of so much per pound for the paper delivered, plus an additional charge to cover the reasonable cost of the packing? This change could be accomplished if you would all stand together.

In conclusion, how near is this association to being ready to seriously take up any of the foregoing suggestions?

Gentlemen, you alone can answer that question.

The treasurer, R. P. Andrews, then read his report.

Report of Executive Board

THE PRESIDENT—We have the report of the executive board, gentlemen. In this connection I want to say that the executive board were in session all day yesterday, about seven hours and a half, and while our report does not show very much in the way of definite action, at the same time a great many things came before us, things which it is necessary for us to discuss, and some of those matters will be brought up this afternoon, and we will ask for your action on them, but so far as our report is concerned we have very little definite action to recommend at the present time.

Mr. Ridgeway then read the report of the board as follows:

Pursuant to Section 6 of Article II of the bylaws, the board begs to submit the following nominations for officers to serve for the ensuing year:

President—E. U. Kimbark.

Vice President—John Leslie.

Second Vice President—E. E. Wright.

Treasurer—R. P. Andrews.

Secretary—Thomas F. Smith.

The board recommends the amendment of Section 4 of Article V of the bylaws by striking out the present section and the substitution therefor of the following:

"The executive board meetings shall be held at the call of the president."

THE PRESIDENT—These recommendations will come up later, gentlemen, in their regular order.

Is the report of our credit committee ready?

A. H. Smith then read the report of the credit committee as follows:

Report of the Credits Committee

The past year there has been marked progress along the line of credit reform.

At the summer meeting of the National Paper Trade Association a credit statement blank form was presented and referred to the credit committee for approval. It was unanimously agreed that it would be wise to adopt a uniform statement, which would be the official form in use in the association.

After due consideration by your committee we have concluded to recommend two forms—a long and a short one, the long one being practically the same as the one proposed by Mr. Addoms at the summer meeting.

The long form, being quite comprehensive, is better adapted to the large trade, and in particular cases, where it is necessary to get the fullest information and in greater detail, while the short form is better suited for general use, and is more likely to be filled out and returned promptly by the prospective customer.

THE PRESIDENT—Is there any report from the committee on twine, Mr. Forsyth?

MR. FORSYTH—I haven't had any report. I think we made progress. I might say that we are now after the chief offender and largest upon the tare question of anyone there is in the country, and pressure is being brought to bear on him. I think we have accomplished a lot, and we will accomplish all we want before we get through.

THE PRESIDENT—Any report from the committee on ledger, Mr. McClellan?

MR. MCCLELLAN—Very little that the committee has to report on ledger papers further than the change of 500 sheets to a ream instead of 480, which we all seemed to favor.

The Important Subject of Terms

F. W. Wilson then read the following paper on terms:

I am of the opinion that our credit department is the most important branch of our business and deserving of all the time and consideration we can devote to it. In stating this I do not feel that I am compromising our buyers or sales managers in their very important stations, generally recognized as upon whom the success or failure of jobbing houses depends to a very great extent. Goods may be conservatively and judiciously bought, and even as well sold, figuratively; but the final results and actual profits of each sale are acquired and made after the credit man has contributed his ingenuity and ability to discover the responsibility of a customer to pay.

In the extension of credits the matter of terms must be conservatively considered, particularly with those houses that have the triple system of thirty, sixty and ninety days; for the opportunity to collect is recognized as more favorable on short time, and the debtor has less opportunity to enlarge his account to an unmanageable amount. Therefore the credit department is the first to appreciate the reasonableness in the agitation of the subject of reduction of the maximum time limit as generally existing today, and the adoption of such terms as will conform with modern business methods.

It must be admitted, and known to us all, that there exists in our line of trade terms innumerable. Long terms are an acknowledged detriment to the houses that sell on short terms and have a demoralizing effect; and from practical experience I have found it equally detrimental to practice it as a policy to the extent that the offer of "liberal terms" (as it is sometimes called) is an extravagant inducement in order to make sales; and another method by which we practice daily the encouragement of irresponsible parties to remain in business at the sacrifice of those of our customers on whom we can depend. This point is worthy of afterthought and should receive your consideration.

WE ARE TOO INDULGENT IN GRANTING TIME.

Many of us are too lax and indulgent, and are inclined to accede to requests for accommodation; and usually a debtor is quick to perceive the liberal spirit of his jobber and proceeds to make you his banker, without even a hint of legitimate compensation for the loan of your capital.

From the information I have I judge that not a few occupy this unenviable position, and just as many are appealing for relief by concerted action in the closer regulation of terms, as well as more strenuousness and determination in our efforts to collect at maturity. I have in mind one house that, to my surprise, wrote me they had no regular terms, and conditions governed each individual case, and that a uniform time limit would be welcomed. Another writes: "A change in the present conditions would be a godsend to the trade use." This comes from the West.

Time is too limited to cite more, but it does not take a business genius to observe the necessity of a reform which can only be had by concerted interest and earnest co-operation on the part of all jobbers—East, West, North and South. And the solution of this very vital menace is now in your hands. What shall we do with it?

The Association and the Manila Dealer

THE PRESIDENT—We just have time to hear from Mr. Platt, of the Philadelphia Association.

MR. PLATT—All I have to say is in the nature of an indorsement, and I want to make it as strong as I can, an indorsement of the cost agitation, the cost discussion that has been going on for the past year to eighteen months, because I believe it is the most vital question we have ever had up in our association. It is ancient

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ALL KINDS OF
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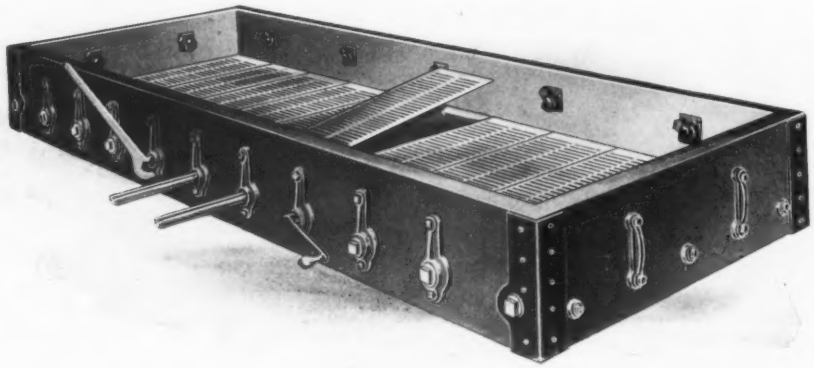

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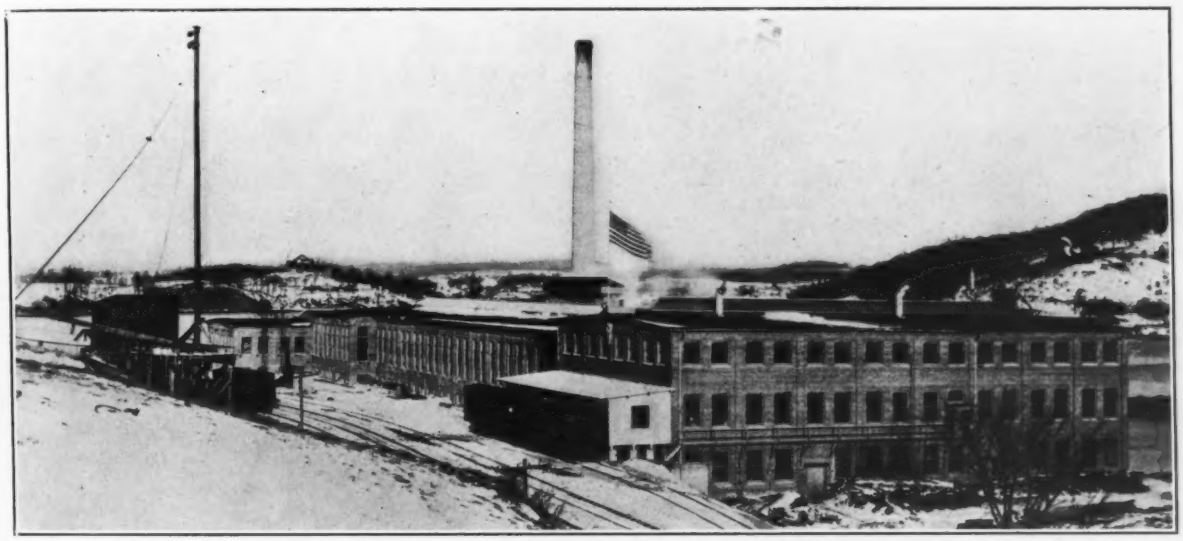
HARDY BRONZE SCREEN PLATES AND SUCTION PLATES

history to say that the remark has gone the round, Of what use is the association to the manila man? We have had that before; it has come up time and again. I think you will bear me out when I say that, to refer to our discussions, one would think that the paper business was entirely between the printer and the jobber; that the question of credits, the question of time, the question of production and who is not a legitimate mill customer comes up between the printer and the jobber; that the manila end of it gets very little of the discussion. But I think that is passing, because I believe we are entering into a work which is of a great deal of value, which is vital to every paper jobber, wmether he handles manila papers or book papers or flat papers, or whatever he may handle—and that is the question of figuring cost. I think we are taking up by far the most important work yet undertaken. It is a work that will more than any other tend to bring about that co-operation which is so necessary to business success today, and I think it means that we are turning away from blaming somebody else for the faults that exist.

We are beginning to look within ourselves and beginning to do something to size up the "department of the interior," so to speak, and we are beginning to straighten out some of the curves within our own organization rather than blame all the evils upon either our competitor or the mill man. I think the jobber today who does not recognize his mill as an asset equally valuable as his customer; that is, the mill as an asset equally as valuable to us as our customer or our good will, I think the jobber who does not realize that is not waking up to the situation as it exists. The time has gone by, for some few years, when the manufacturer can run his business by rule of thumb, but it has not gone by so long—and for some of us it hasn't gone by at all—when we feel that we can run our jobbing business by rule of thumb. We feel that the difference between the invoice cost and the selling price represents our profit. After the splendid articles that have appeared on costs and the discussions that we have had, you cannot find a jobber today, I do not believe, who does not feel that his cost represents his invoice cost plus his expense of doing business; but I do believe that there are many of us who have not the courage to face the truth as we see it.

On Selling at a Loss.

I have been told quite recently by jobbers that certain orders which they had on their books would not stand their overehad charges; that if they applied their overhead charges or the proportion of their overhead charges to that particular order, they would be selling at a loss. Well, I claim they are better off without that order than they are selling it at a loss, because it is just as much a loss as though it were sold below the invoice cost. Accurate cost percentage is the first which is needed in getting the conduct of our business down to a scientific basis. We must know positively what percentage of expense to add to each class of business, dividing our business roughly into the mill business and the warehouse business. The more we study into this subject the more interesting it becomes and the more we find there is to know about it. We find that the different lines should carry a different percentage of expense. We find that a carload business should carry a different percentage from the small retail orders. Now it is a very simple matter to determine from a year's business just what percentage it has cost us to do business, dividing that percentage into the mill order business and the warehouse business; and I think if we even go that far and no farther we will have accomplished a great deal, because I believe there are a number of jobbing houses today which do not even go that far, and to me it appeals as a vital principle, for we know from our own experience that this method of figuring has a number of incidental advantages in addition to the fact that we know where we stand on each individual order. There is some satisfaction in knowing how much money you have lost, if you have lost any. It has a good effect on our salesmen; we have opened the whole proposition to them, and they begin to realize that it costs us money to do business; it is an education to them. In the second place, they know that they must get a price above our invoice cost plus our percentage plus our cost of doing business before they make any profit either for themselves or for the house; and thirdly, they know that in order to decrease this ratio of expense, in order to cut down their cost, they must increase the volume of their individual business. It has a strong tendency to increase their sales. In the fourth place, they will develop among them a tendency to push the more profitable lines and keep their eye on the volume of profit as well as the volume of sales. These are only a few of the incidental advantages which have worked out in our own personal experience.



View of the New Plant of the Thames River Specialties Company, Montville, Conn.

The Proper Compensation for Salesmen.

There is one more point that I should like to see discussed, and that is the method of compensation for salesmen. To me it is a matter of simple arithmetic; invoice cost plus expense plus the

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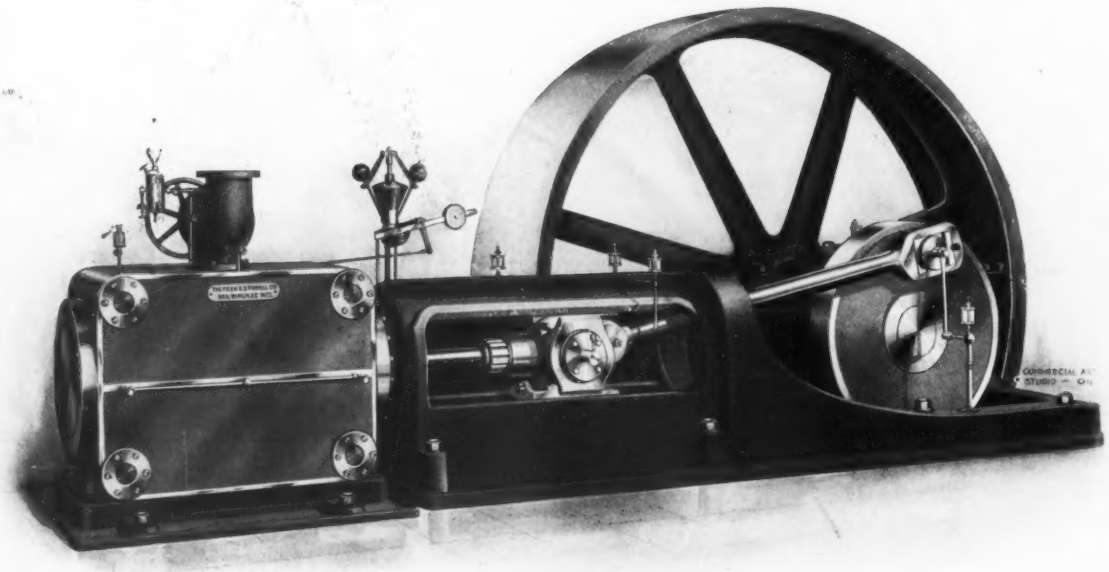


Some of the more prominent installations among paper mills are the following:

Nekoosa-Edwards Paper Co., Port Edwards, Wis.,	3	Engines
Great Northern Paper Co., Millinocket, Me., .	9	"
Patten Paper Co., Appleton, Wis., . .	1	"
Kimberly-Clark Co., " " . .	7	"
Fox River Paper Co., " " . .	1	"
Riverside Fibre & Paper Co., Appleton, Wis.,	1	"
Green Bay Paper & Fibre Co., Green Bay, Wis.,	1	"
Marinette & Menominee Paper Co., Marinette, Wis.,	2	"
Neenah Paper Co., Neenah, Wis., . . .	1	"
Howard Paper Co., Urbana, Ohio . . .	1	"

amount that we pay our salesmen, equals our cost to the house. What is left between that and the selling price is our profit. On this principle the plan of paying the salesman a percentage of the gross profits must fall to the ground. I believe the principle of paying them a percentage of gross profits is wrong. It is wrong in principle, and I don't want to take time to discuss it, because when I get going on that I have poor terminal facilities. (Laughter.)

I want to say just a word on the work done by our local association on the credit system. We are probably seventeen years behind Chicago and two hundred years behind Boston; I don't know but what we are pretty nearly up to New York (laughter); but we have organized a credit clearing house of our own. Of course our market is somewhat different from the Chicago and the Western market—very much more local. That scheme can be worked very much better with us possibly than in the Western cities, but I am going to read this, so that I don't get off the track with any of the facts.

Credit Meetings Very Beneficial.

One of the most important features of our year's work has been the organization and development of the credit meetings. This is of substantial and lasting benefit to every member of the association who use it, and it is growing in importance and in its beneficial effects as more of the members come to realize its significance and give to it the hearty co-operation it deserves.

The plan is, briefly, to hold a monthly meeting, to be attended not by the members of the firm, but by the credit men of the different houses.

These meetings are attended regularly every month by the credit men of ten to twelve individual houses. During the year, of course, a number of names have been reported, some as absolutely no good, some as slow, a few were reported as returning checks, and some few as being men who put up unjust claims. This has absolutely prevented a customer, after getting the full limit of his credit with one house, from letting it soak and then going into some other easy mark and running up a limit. The individual experiences, upon request, are simply given, and any member can make note of it or not, as he pleases, and he is privileged to go ahead and sell any one on any terms he pleases, even though such a one may have been a most undesirable credit with his competitor. There is absolutely no restriction or no agreement as to whom we will or will not sell.

This has actually saved members many dollars in bad accounts; has saved much annoyance and collection fees, and has also, in some instances, enabled us to sell where we would not have granted credit without some definite information.

It has brought our members together for much better co-operation than we had ever been able to do in Philadelphia before; and we have even sent invitations to attend these credit meetings to all the non-members of our association, to any one who is in the paper business in good standing in Philadelphia.

The meeting then adjourned to 2 p. m.

AFTERNOON SESSION.

The meeting was called to order at 2:35 p. m.

After some discussion the meeting decided to send the following telegram immediately:

"Senator W. Murray Crane, Washington, D. C.:

"National Paper Trade Association in convention assembled eagerly awaiting your action on Nelson-Tou Velle bill. Don't let our enemies circumvent us by having no meeting or breaking a quorum of committee or any other subterfuge. Beg you earn lasting gratitude of allied industries by personally compelling action today.

"(Signed) National Paper Trade Association."

E. A. Mason Talks on Quality

The President—We will proceed with the program for this meeting. We have a paper from E. A. Mason, of Chicago, which I will ask him to present now—Mr. Mason, of the Midland Paper Company, of Chicago.

Mr. Mason then read the following paper:

Mr. Chairman and Gentlemen of the National Paper Trade Association—When the genial president of our Western association asked me to write a paper for this meeting, in response to my query—on what subject?—he answered, "Anything at all that you feel you can say anything about."

At that time I did not realize how much of a contract it was, particularly with no specifications to work upon. I assume that anything I might say must be based on local conditions, which will vary to some extent in the different sections of the country in which our members are located. I also assume that the subject of "quality" will have been brought to your attention before. However, it is always timely to turn over a new leaf, as was indicated to the school teacher when she was handed the following note by one of her pupils who had been absent for several days:

"Please excuse Sarah for not coming to school. Her mother had twins. It shall not occur again.

"(Signed) Father of Same."

With this assurance I take the liberty of bringing the subject to your attention again today.

I refer particularly to the manner in which our tonnage is increasing on the cheap line of "so-called bond." We are primarily a "bond" house, so it may be that I am more sensitive in this regard than those of you who carry a more diversified line. In looking over our records recently I was surprised to find that our business had increased over 300 per cent. in the last twelve months on this particular line. From such inquiries as I have made I am inclined to think that neither we nor our particular section of the country are different from many of you in this respect.

The "cost of doing business" is one of the most important subjects we have under consideration at this meeting. We have heard some splendid papers along this line, and we know that our president and the executive committee have given a lot of time and thought to this subject.

Costs as Much to Handle Cheap Grades as Fine Ones.

I feel very strongly that this increase in the business which we are doing on these cheap lines of bonds is an important element in the "cost of doing business."

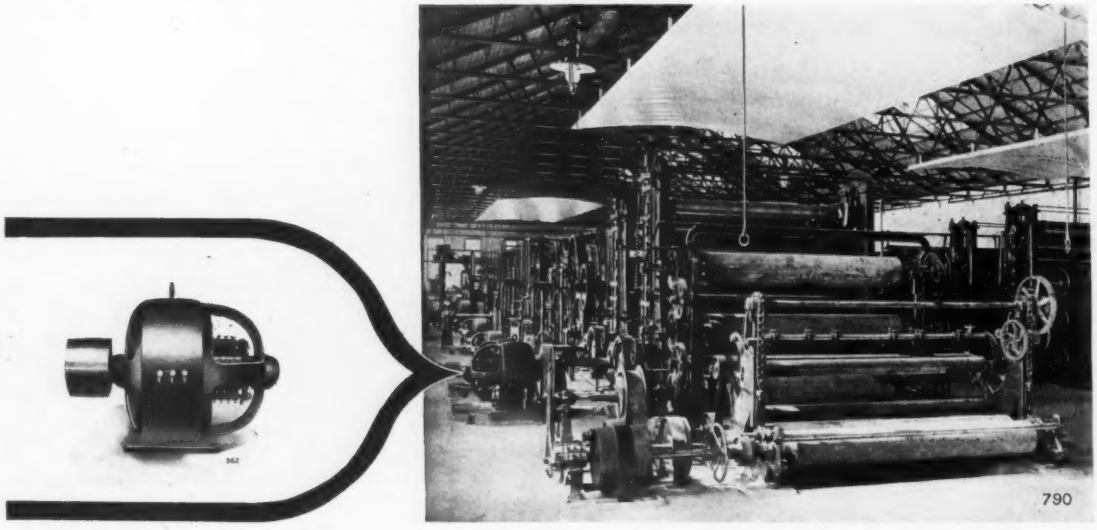
It costs us exactly as much for freight, cartage and to handle a case of this paper and it takes up just as much space in our warehouse as does a case upon which we make four times as much profit. The way our tonnage is increasing on this particular line seems to me worthy of serious thought, and it is time we made a more determined effort to educate our customers toward a higher quality. "Quality" is everything—the password of the best economy and the time test of cheapness. It is the best advertisement and the best trademark.

Certainly a salesman can take little pride or can there be much satisfaction to the house in handling an order for five cases of 5 cent bond when we realize that it has tied up double the capital and occupied five times the space in our warehouse, and at no greater profit than we would obtain on one case of medium priced bond paper.

I received a letter within a few days from one of the mills which had been making this grade for me advising that they had decided to give up making this line and to devote their output to higher grades. I read this letter with a considerable feeling of satisfaction, and, while it would put me to some inconvenience in placing the line elsewhere, I felt that a start had been made in the right direction and that one mill had set us jobbers a good

CROCKER-WHEELER MOTORS

Make Good in Paper Mills



Crocker-Wheeler Form I Motor, 3 3-4 to 50 H. P. See Bulletin 120 V.

Two 134-inch Fourdrinier Machines at the Plant of the King Paper Co., Kalamazoo, Mich., each equipped with 8 Crocker-Wheeler Motors.

BECAUSE:

They can be individually applied.

Have Multiple Speed Regulation.

Secure the highest degree of efficiency, together with close regulation.

Give Maximum Output.

May we tell you further why Crocker-Wheeler motor-drive is the best and most up-to-date method of operating your paper machines?

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COMPANY

MOTOR-DRIVE EXPERTS

AMPERE, N. J.; BIRMINGHAM, BOSTON, CHICAGO, CLEVELAND, DENVER, DETROIT, NEWARK, NEW HAVEN, NEW YORK, PHILADELPHIA, PITTSBURG, SYRACUSE, Etc.

example. I realize that the "hankering after quality" may be carried to an extreme, as in the case of two society ladies, one stating with more or less pride "One of my ancestors was handed by Henry VIII," the other promptly replying, "How perfectly lovely."

It does seem to me, however, that we depreciate our own business by continuing to increase our sales on these lines and to continue to meet the demand without an effort to improve the conditions. A man's vocation may become his art, his business a reflection of what he is. It isn't the number of songs in a man's repertoire, but the "quality" in his singing which nets him $2,000 a night. To appeal to the select taste is to raise a popular standard.

SALESMEN SHOULD BOOST "BETTER QUALITY" GRADES.

Why not instruct our salesmen to commence at once a campaign of education to increase the sales of the "better quality" of paper. Thus will we not only increase our profits, but we will also put our business on a higher level.

NORTHERN PAPER MILLS, GREEN BAY, WIS.—GENERAL VIEW, SHOWING NEW ADDITION.

The man who makes an art of his business accomplishes a kindred social ministry. Quantity may satisfy, but "quality" educates. Better a few reams we are proud of than tons of stuff of which we are ashamed.

The Cost of Doing Business

THE PRESIDENT—Gentlemen, we will hear from E. F. Evans, of the Cincinnati Cordage and Paper Company.

The following paper was then read by Mr. Evans:

MR. PRESIDENT AND GENTLEMEN—In a former article, under the title "More Light," the purpose was to present for the consideration of all members of the association a specific plan of "How to determine costs," not "What constitutes costs" or "What it costs to do business"; and while I am down on the program for a paper on the last mentioned topic, I have taken the privilege of diverting from the specific assignment, in order to more fully illustrate the original technique or plan of "More Light."

While it is true that "What it costs to do business," "What constitutes cost" and "How costs are obtained" may be classed under a general theme of "Costs,' at the same time each sub-topic should be considered and treated separately, inasmuch as various contributors are able to present valuable data from many angles and viewpoints; therefore, while every possible effort will be made to confine this paper to its proper subject, it may be possible some overlapping will occur.

That there is widespread interest manifested in the subject of costs by commercial bodies, and more especially in the class of trade known as merchandise jobbers, is acknowledged without question; and since this all important subject is absorbing so much attention of so many commercial lines, it is natural to acknowledge there must of necessity be a cause. What the cause is in fact need not be a part of this paper; it is certain, however, that it is not a special interest in the welfare and prosperity of our competitors, or associated merchants, that can be offered as a reason for the many efforts put forth from time to time by us for the enlightenment of others, but all our helps along this and any other lines are mainly for the purpose of improving the prevailing unsatisfactory conditions in the jobbing trade, in order that we individually may reap a more golden harvest. Nor can we accept for a moment with sincere confidence the belief that we will adopt such proper measures as may be within our power to elevate our selling prices, even though the electric light of fact has been flashed before us, and established without any question of doubt, that it costs a specific amount to sell a certain article of merchandise, nor will we stop resorting to every means supposedly fair, and very often unfair, to secure all the business in sight, and take it away from our "friend," the competitor, even though it becomes necessary to cut his price to secure the order. Is it not a fact that salesmen, as a rule, believe they are given the preference by customers when the salesman slightly shades the price of his competitor; and may we not safely say that many principals of the company frequently are inclined to the same delusion?

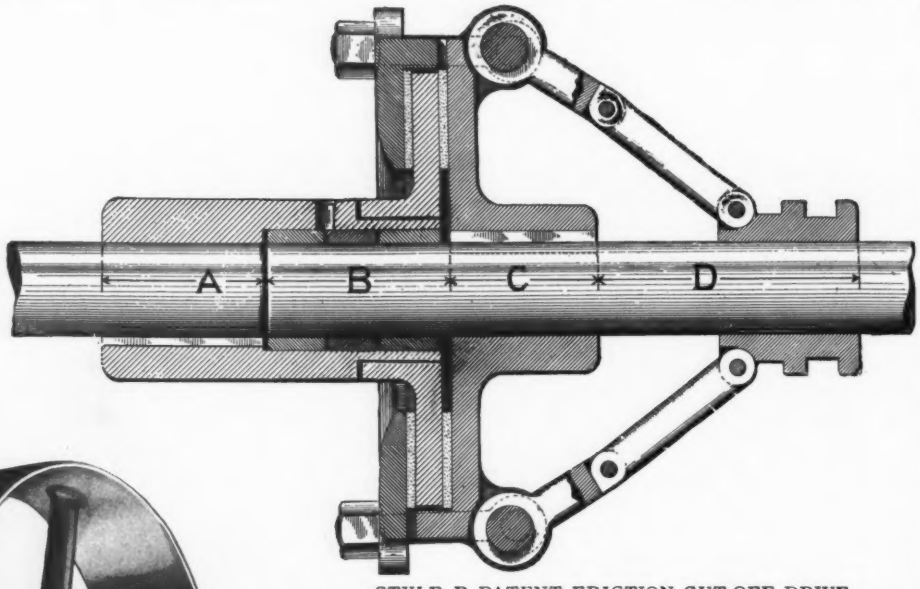
"More Light," presented at the last meeting held by this association at Cleveland, Ohio, was subsequently printed and circulated in pamphlet form. Among other things referred to in the plan, particular attention was called to the keeping of a salesman's record, and departmentizing all the expenses incurred in the conduct of the business, primarily that a proper analysis of the sales department might be made, from which analysis other valuable data upon the business in general might be secured. In order to clearly comprehend how this plan contributed the desired information in its operation I ampleased to submit as an addition to the original contribution entitled "More Light" this paper, and with it a monthly report, to further illustrate the plan as far as possible without going into too exhaustive details.

FORMS USED IN FINDING COST OF DOING BUSINESS.

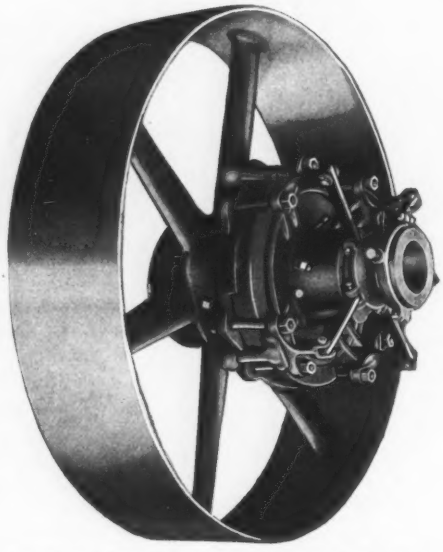
It will be observed that the report is divided into two parts. One part, the financial statement, represents the totals of all items of expense in the conduct of the business during a given

McMahon Patent Friction Clutches

The only clutch with which you can afford to have your machinery equipped is the one which will keep up the production by holding the machine to its capacity. This is what our clutch will do.



STYLE B PATENT FRICTION CUT-OFF DRIVE
Our Friction Clutches are being constantly specified in connection with Paper Mill Machinery.



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With connecting jaw collar for Paper Mill Pulleys.

The details of every Clutch are designed for long and severe service, and for the swing of clutch and amount of space required on shaft they will transmit more H. P. than any other clutch on the market.

Friction Clutches from ½ H. P. to 1,000 H. P. Friction Pulleys from four inches to eighteen feet diameter.

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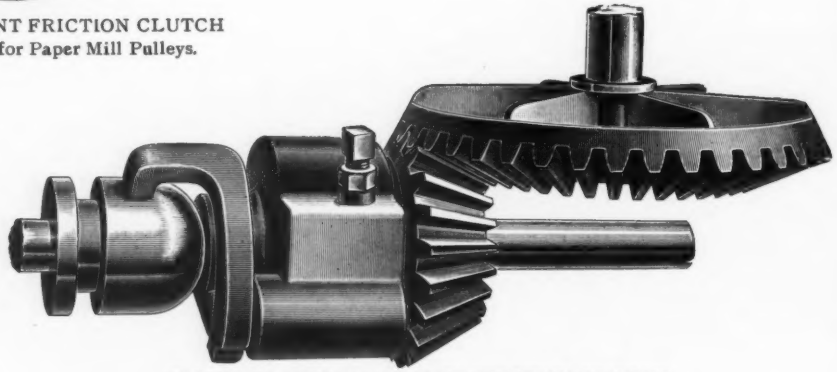
McMahon & Co.

Worcester, Mass.



McMAHON STYLE A PATENT FRICTION CLUTCH
For Gears, Pulleys, Sheaves, Sprockets, etc.

period, one month, all of which items are charged or distributed to the various departments as suggested in the "plan"; namely, "administration," "warehouse," "special drayage on direct shipments" and "salesmen's expenses and salaries." These items are supposed to include under their various heads all items of expenditures, collection of accounts, loss of accounts, and, in fact, everything for which there has been no material equivalent, in the operation of the business. No attempt has been made to submit a detailed transcript from the regular books, but the items are segregated in their proper departments, and while there may be a number of items apparently omitted according to your opinions, the "plan" rather than an accurate statement is the purpose of submission. We realize that each business has its own individuality, and no general plan can be offered to cover every phase of such individuality. By looking over the items charged under the head of "administrative," the sub-heads could cover everything properly belonging to this department, and in the statement presented it will be seen that:

The total amounts to	$2,627.17
Warehouse expenses amounts to	2,077.39
Salesmen expenses and salaries amount to	1,964.19
Special drayage amounts to	162.00
The gross expense therefore is	$6,830.75

The second part of the report is the salesman's record. It shows the total amount of the business transacted during the month—by whom, and to what amount in the various classes into which we have divided our business, together with the gross profits earned in each class by each individual selling agency.

It also shows as follows:

How much of the business has been done from the warehouse.

How much of the business is direct shipments, both with and without drayage expense.

The total gross earnings.

The percentage of cost as well as earnings of each individual selling force.

It will be noticed that we have recorded in the report seven classes, segregating all our lines under these seven classes, in harmony with our previous plan. It will also be noticed we have not attempted to treat the warehouse individual costs on the seven separate classes, while we have worked out our own—they may widely differ in individual cases. These warehouse costs can be obtained, if the plan is followed, but they are not germane to this exposition.

This also reveals to us whether the sales force has been profitable or otherwise; and to what extent; in other words, which of the sales force has contributed by his labors to the loss or profit of the month's business.

I venture here the statement that when you keep this tab on your individual sales force you will have a new vision in more ways than one.

Keeping Track of Sales.

The salesman's report shows nine sales agencies, numbered one to nine. The first eight we shall say represent employed men, either on salary or on commission, while No. 9 represents sales made by the house direct and such sales as can in no sense be considered as belonging to the credit of any of the salesmen. Here let us notice:

The total gross sales, as shown by the report	$68,742.48
The total gross profits	8,011.53
The total gross expense	6,830.75

or practically 10 per cent on the gross sales.

The warehouse sales amount to $30,173.80, with gross profits of $4,860.92, practically showing 16 per cent.

Direct shipments, $38,568.68, with gross profits of $3,150.61, equivalent to 8 15-100 per cent.

While these percentages have no immediate bearing upon the subject, it is well that they be held in mind during the analysis.

The figures in black ink entered in the columns under each division of classes indicate warehouse sales and profits, while the second line figures in red ink indicate the direct shipments from mills, and the third line of red figures indicate the direct shipments from the mill on which there has been special drayage and other expenses added. It must be borne in mind that these totals are obtained from the individual salesmen's records, into which we enter every order or sale daily; an example of which may be seen in the pamphlet referred to so often.

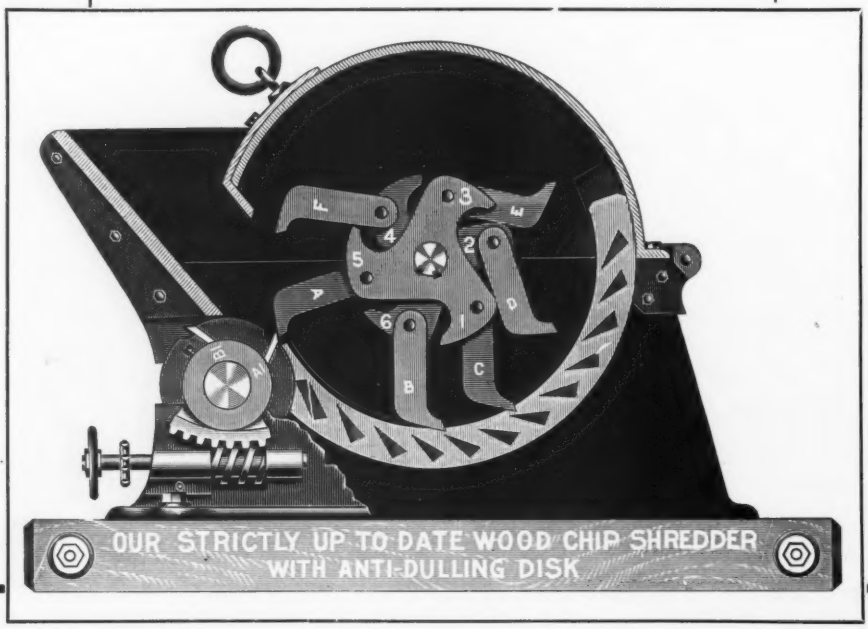
Now let us begin to analyze some of the individual salesmen.

No. 1: Please notice, first, that in the column, total sales, this salesman has been credited with sales amounting to $5,273.68 and total earnings $598.71; second, as given above and shown by the report, our average cost on the total month's business is 10 per cent.—from this viewpoint—and which is a common error indulged in by many. Salesman No. 1 appears to have earned a

Albert Diem,
President Diem & Wing Paper Company.

profit of $71.35 above our average cost. Again, having earned $598.17, and having been paid a salary of only $117.17, it would be natural to consider this salesman as a very good one and a profit maker. Could you possibly be made to believe that salesman No. 1 contributed a loss to your month's earnings, and that such loss had to be made good from some other source? The report reveals the true facts. Let us see: $4,335.09 of his total sales were deliveries made from the warehouse, $32.16 were direct shipments, and $906.43 also direct shipments with drayage expense added. Salesman No. 1 cost in salary $117.17 to sell $5,273.68 merchandise, which is equivalent to 2 22-100 per cent. of the amount of sales. Now notice at the bottom of the column $30,-173.80 represents the total warehouse shipments, at an expense as shown on the financial report of $2,077.39, which is equivalent to 6 90-100 per cent. for warehouse expense. The financial report shows $2,627.17 charged to administrative department for the conduct of our total month's business of $68,742.40, which is equivalent to 3.82 per cent. (These figures are not to be accepted as correct decimally.)

NO MORE LONG SLIVERS



PUT A WILLIAMS CHIP SHREDDER BETWEEN YOUR CHIPPER and SCREEN

This machine makes a uniform product
so that it will cook thoroughly

USED BY			
WEST VA. PULP & PAPER CO.,	7 Machines	HAMMERMILL PAPER CO.,	1 Machine
NEW YORK & PENNA. CO.,	2 "	CHERRY RIVER PAPER CO.,	1 "
UNION BAG & PAPER CO.,	1 "	AND MANY OTHERS.	

We also make an automatic machine for shredding BARKINGS and SHAVINGS from barkers—fine enough for fuel.
250 used by wood extract makers.

WRITE FOR CATALOGUE 15.

Williams Patent Crusher & Pulverizer Co.

WORKS: ST. LOUIS OLD COLONY BUILDING, CHICAGO

THE WORK OF THE SALESMEN TABULATED.

We now have the following, as percentages for salesman No. 1 for warehouse business:

	Per Cent. of Amount of Business Done.
Salesman expense	2.22
Warehouse expense	6.90
Administrative expense	3.82
Total	12.94

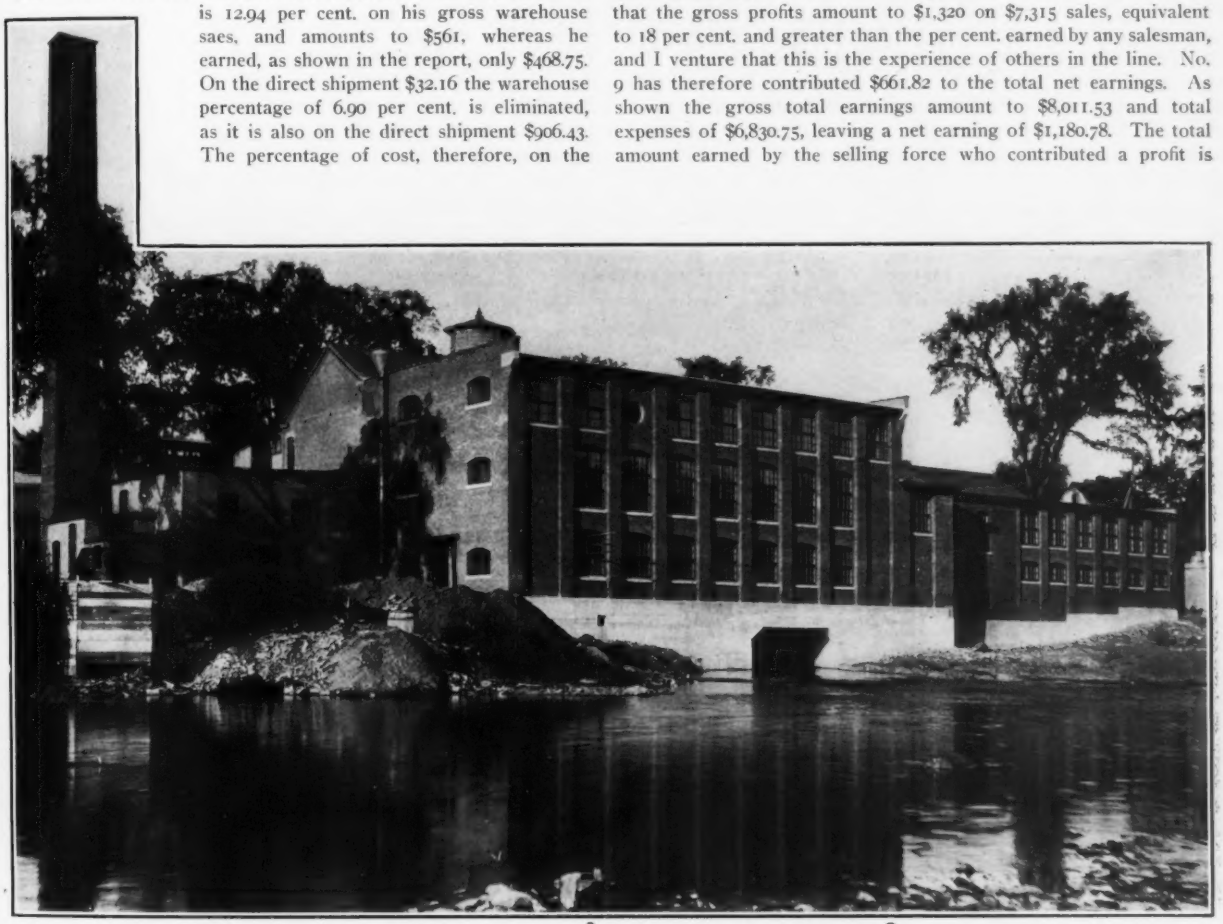
Our actual cost for the warehouse deliveries of this salesman is 12.94 per cent. on his gross warehouse saes, and amounts to $561, whereas he earned, as shown in the report, only $468.75. On the direct shipment $32.16 the warehouse percentage of 6.90 per cent. is eliminated, as it is also on the direct shipment $906.43. The percentage of cost, therefore, on the $32.16 is administrative 3.82 per cent. plus salesman's 2.22 per cent. equal to earning of $1.93, and on the $906.43 direct sales the cost is:

	Per Cent.
Administration	3.82
Salesman	2.22
Special drayage	1.20
Total	7.24

and equal to $65.65. Salesman No. 1 should have earned to cover our actual cost the total amount of $628.58, whereas he earned but $598.71, and is therefore a loser to the amount of $29.87.

We shall pass by salesman No. 2, with a reference only to the fact that he also was a losing contributor, to the amount of $113.96, and that his individual sales percentage, salary and expense amounted to 4.22 per cent.

Salesman No. 3: Sales were $13,511.64; salary and expenses, $463.45, equivalent to 3.43 per cent.; total earnings, $1,459.73. While figuring in like manner as in the analysis of No. 1, salesman No. 3 cost the business $1,244.45, which shows him to be a contributor to the gain column to the amount of $215.28. Likewise all the salesmen's records show either a loss or gain, so we will pass to No. 9, which, as stated heretofore, represents house business and on which there is no salesman expense and to which we are obliged to charge up as expense the same percentages as to the other salesmen, with this one exception. It will also be observed that the gross profits amount to $1,320 on $7,315 sales, equivalent to 18 per cent. and greater than the per cent. earned by any salesman, and I venture that this is the experience of others in the line. No. 9 has therefore contributed $661.82 to the total net earnings. As shown the gross total earnings amount to $8,011.53 and total expenses of $6,830.75, leaving a net earning of $1,180.78. The total amount earned by the selling force who contributed a profit is $1,335.31 and the amount of loss contributed amounts to $156.90, leaving a net earning, as shown by the salesman's record, of $1,178.41. The difference of $2.37 in the record is accounted for by omitting some portion of the decimals in figuring percentages. Thus it will be seen that the net earnings are proven correct by separating the percentages of costs for each individual selling force and also proves without question whether the salesman is a contributor to the loss or gain column.



VIEW OF MILL OF THE COY PAPER COMPANY, CLAREMONT, N. H.

DON'T LET SALESMEN MAKE THE PRICES.

It is not our purpose to bring into this paper anything pertaining to the salesman, but simply refer to him as an instrument in the hands of the officials of the company for the successful operation of the business. It cannot be questioned or denied that the means

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Producers of the

HIGHEST GRADE BRIMSTONE ON THE MARKET

Absolutely free from Arsenic, Selenium or Tellurium

The Largest Sulphur Mine in the World

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Inquiries solicited for immediate deliveries or yearly contracts.

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Under U. S. Patents No. 847,085, No. 863,031 and No. 867,963

THE **ONLY DRY ROSIN SIZE** which will dissolve absolutely in hot water. Needs **no re-cooking or addition of soda ash.** Will dissolve in less than one hour.

Dry Size saves freight on water and will save from 25 to 40 per cent. of your size bill. Can be stored in any place. Will give a better color and, where required, a hard sized, snappy sheeet. Ask us about the results we are having **with other mills.**

We Also Sell:

Arabol Paper Size **Splicing Gums** **Sphinx White Coating Size**
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Make Your Own Caustic and Chlorine

LATEST, MOST IMPROVED, MOST EFFICIENT, SIMPLEST, therefore

BEST

ELECTROLYTIC CELL

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CAUSTIC and CHLORINE

in existence

Will make either Caustic Potash or Soda. Leased on Royalty to Consumers

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NIAGARA ALKALI CO.

NIAGARA FALLS, N. Y.

is within the power and rests entirely with the general management and heads of departments, more especially the sales manager of all commercial institutions, to correct errors and abuses of merchandizing. We have always believed that the jobbing paper merchants have been conducting their affairs somewhat irregularly by permitting our salesmen to make the selling price or, more often, allowing the customer to name the price on our commodities without any apparent regard for their true cost. And while we are aware this has been the custom employed by our tradesmen from time immemorial, and we are certain of our power to change these and other conditions, we doubtless will hesitate as individual concerns to place our business in the class of those "Legitimately Conducted," fearing the loss of business and the probable cost that would be incurred by attempting to make the necessary change. No, we are too often inclined to refer to our "friends," the competitor, as the demoralizing element in the trade; and when we go about, or allow our salesmen to, it is unhampered, save with full armor on and swords drawn—free agents with but the single injunction: "Go out and get business; we need it. You have the actual naked cost; get the best profit (?) you can." At the same time I am confident that most of our salesmen are convinced that the other fellow, your competitor's salesman, has a lower cost on every item than he had.

Permit me in conclusion to hope that this contribution will be the means of aiding all who are sincerely earnest in desiring to learn what it really costs to do business, and that we ourselves may in some measure be especially benefited.

Co-operation With Our Trade

The following paper was then read by Mr. Albert M. Miller, of the Central Ohio Paper Company:

At the suggestion of several Ben Franklin Club members and with the endorsement of the chairman of the Printers' National Cost Commission, I desire to bring before this meeting a proposition by which we paper dealers can help ourselves by lending a hand to the printers. In other words, by co-operating with the printing organizations throughout the country to bring about better trade conditions for all.

THE PRINTERS' COST COMMISSION.

Something over a year ago there grew out of the continued disappointment of the printers in the results of their inventories a demand for investigation of their losses. It was soon found that but very few printers figured their costs intelligently, and so a committee was appointed to study the matter of figuring costs, and this led to the formation of a National Cost Commission, of which J. A. Morgan (11 South Water street), of Chicago, is chairman.

This commission has prepared very carefully a system of record blanks by which every job that goes through the shop can be watched and made to show a profit in each department. Every piece of work done on the job carries its own cost and share of profit, and consequently the printer is left with something to pay on his press and paper bills.

What are the results? The printer becomes financially stronger, keeps his account paid up and ceases to be a burden and a nightmare to the paper man. Our chances of loss and cost of collections will be materially reduced. Again there is a certain moral elevation in the printer's way of doing business. When he figures on a job in this new intelligent way he will get his profit on every part of the work, or let it go, and not make a hit or miss guess on the printing cost, depending for his profit on cheapening the stock he uses.

Gentlemen, we have all suffered from this. Job after job that a few years ago was printed on 10 or 12 cent paper has been beaten down by one printer after another, until now a 5 cent bond paper is made to answer.

Now, it has been suggested that through our salesmen, who come into daily contact with the printer, often getting closer to him than his competitor, we paper men might aid materially in getting the printers to adopt the cost finding system of this (Cost) commission. Let us instruct them to talk and encourage it wherever they go. As Mr. Morgan says: "If the paper man can only get the printer sufficiently interested to write him for copies of their blanks, we will have done much to encourage the scheme."

Now, another inducement for our accepting the invitation to take part in this work is that the more the printer becomes educated in the proper adjustment of his own business the less will we need to educate him in a proper adjustment of our prices. Which adjustment must be undertaken at once, for, as Mr. Evans has shown us so clearly, we are not conducting all our business on a sane basis. Some things we actually sell below cost if you give them their share of the general expense. The remedy suggested is, to distribute the costs where they belong, then advance the price of every lame article until it carries its weight of the burden. Then we turn to the printer, our friend, whom we have helped to see the mistake in his business, and tell him our troubles and ask that he co-operate by paying us what the stock should bring. Will he balk? Maybe! But will he not be more willing after he has seen the wisdom of his own corrections to fall into line with us?

THE PRINTING BROKER.

Now, one more matter I would like to call to your attention—everywhere we have the so-called printing broker. He may be an advertising agent, an office supply man, or what not, but he tries to make his living by coming between the printer and the consumer. The printers blame themselves for the growth of this evil, for they have accepted his business; but what is the result? A party with practically no investment in his business buys paper stock at the same price as a large and responsible printer; and he gives his work out to the small printer who cannot buy the stock at all, consequently the printer who has money invested in his large plant and is a worthy customer of the jobber loses out completely. We do not like to sell these brokers, neither do the printers like to sell them their printing.

Gentlemen, this is a growing sore in our flesh, and I beg that you give it thought before we encourage further the selling and trusting of often irresponsible and generally undesirable customers. The day of co-operation is at hand; let's help the printer who needs us that he may help us who need him.

THE PRESIDENT—We have a paper from Mr. Alling on the cost of doing business.

Mr. Alling's paper follows:

I do not need in this assembly to argue about the desirability of ascertaining the cost of doing business. We have all of us assented theoretically to that proposition. If I am not mistaken, however, there has not been any very general movement toward actually obtaining what we have been talking about. There has been considerable guessing, which has been more or less intelligent, but comparatively little actual figuring has come to light. I have done some of this guessing myself, and have felt rather ashamed of it, and therefore determined to secure detailed figures from which I could obtain more definite information. As a result of this investigation I have learned some things which are valuable to our business and which ought to be of equal value to others.

THE EXAMPLE OF THE PAPER.

Our company has decided to offer the full results of our work to the other members of the association, as we see no reason why we should not talk frankly with each other. The news paper manufacturers of the American Paper and Pulp Association have set us a good example by the way in which they give each month the exact figures of their business to a central officer, who spreads the information for the benefit of all. I am convinced that the figures of one house in the paper jobbing trade are not unlike the figures of all other houses if we include the same kinds of items under the same classifications. One house will doubtless have a much larger expense account than another, but in all probability the business

transacted by the first house will be proportionately larger in volume, so that the percentage of expense will remain much the same. One company may spend more than others on its sample books, but possibly it saves enough on the salaries and expenses of traveling salesmen to offset that extra expense. The greatest chance for widely differing results arises, I think, from the different methods that may be followed in analyzing the figures and in the different items that are included. One house includes salaries to its officers or partners. Another does not. One charges to operating expense interest on its investment or capital, while another does not. One includes all possible overhead charges, while another ignores them and figures only on the direct expense items which are obviously connected with the transaction.

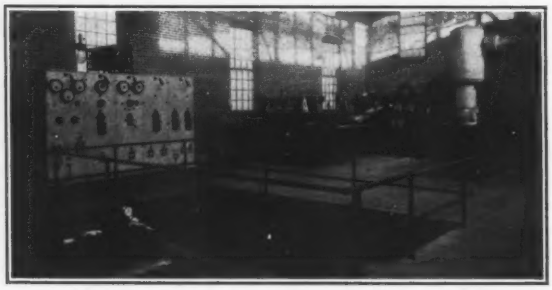
A Method of Finding Cost.

I have decided to take the time of this meeting long enough to describe in detail the method followed in making our analysis and reaching our conclusions in order that if our method is wrong I may learn something; while if it is right, someone else may learn something.

In the first place, I have excluded the matter of rent from our figures, as requested by President Kimbark, of this association. The charges for rent of office, of sales department, etc., etc., are part of the cost of those different divisions of the business, just as much as the rent of the warehouse is a large part of the cost of transacting a stock business. The charge for rent is very properly excluded, as it varies, of course, in different cities, but is probably equalized as to percentage of cost by the larger sales of the larger cities where the rent is the highest. If we own our own building we should charge a reasonable equivalent in the rentable value of the same. This we can easily add for our own information, though it is not included in the items submitted for discussion.

In the second place, I have not added to the costs anything for interest investment. Some people feel that an intelligent knowledge of their cost situation cannot be had without the addition of the proper charge for interest. Here, again, as in the matter of rent, the heavy interest charges of large stocks of goods are probably offset by the larger stock sales, which keep down the percentage of cost.

Before we go any further into the question we ought to recognize that no standard method of ascertaining and figuring the costs of doing business has as yet been developed. One house follows one method, another house another method, and many houses no method at all. Our methods of computation may not seem



Engine Room—Alton (Ill.) Box Board and Paper Company.

to you best, and after full discussion and frank interchange of views, they may not seem best to me, but they will at least give us something to start with.

Now, frankly, I do not see how we can possibly get at the cost of doing business on the different lines of stock unless we first get at the average cost of the various processes or acts that make up business, viz., the acts of buying and selling, bookkeeping, etc. Moreover, in my opinion there is much less difference in the cost of handling different kinds of stock than there is in the cost of doing the different kinds of business which make up our grand total. We all know it costs less to do what we call mill business than it does to do stock business, but have we guessed at how much less that cost is? We have all realized that it costs more to do out of town business than to do business in our home towns, but we haven't known how much more; we have been pretty sure that some salesmen made more profit for the house than others did who sold the same amount of goods, but we have had no way of analyzing the sales to find out absolutely the facts. We could easily get the gross profits, but we could not accurately get the

"Jim Falls" Dam, Built by the Dells Pulp and Paper Company, Eau Claire, Wis.

net profits, because we had not determined the cost of transacting the different classes of business.

Four Different Kinds of Business (Sales)

We all have at least four different kinds of business: direct mill business in our home city and out of it, and stock business in our home city and out of it. I think we ought to subdivide that still further by separating our large contracts from the rest of the sales, because when they are once sold it costs much less to handle them than it does the ordinary items that require a separate sale for each charge. Now, direct or mill business out of our home city has to be sold, has to be charged, billed and collected, but that is all; direct business in our home city has to be delivered by our wagons from the freight house when it arrives, and therefore has that element to consider also; out of town stock business must be sold, charged, billed and collected, must be taken out of stock and prepared for shipment and must be delivered at the freight house by wagon; local stock sales have the same items of cost and must be delivered at the office of our customers.

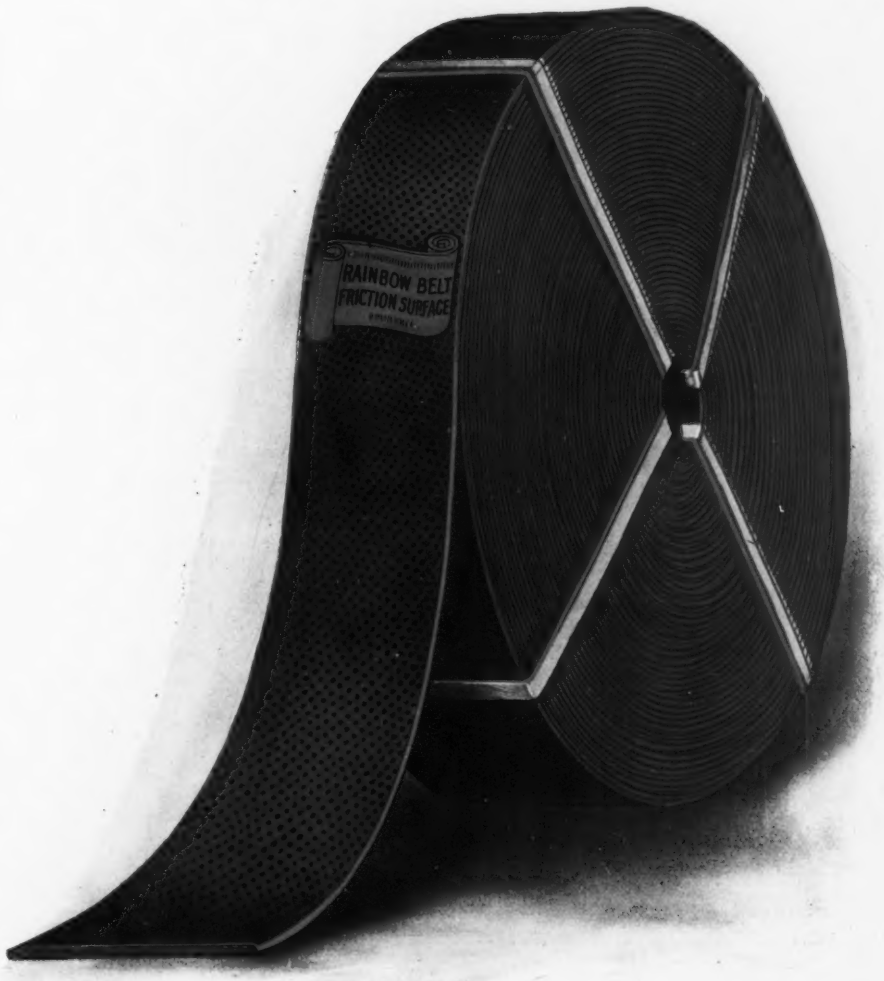
To learn the costs of these different kinds of transactions I have divided our business into five different departments: sales, office, warehouse, delivery and administration, although I have finally spread the administration charges among the other four, so as to leave only four main divisions. I would like to lay before this body the divisions we have made and the results we have obtained, thinking that it will at least start discussion and perhaps bring out some better way.

While we are prepared to be entirely frank, we have realized that there might be a very natural reluctance to reveal the volume of annual sales that we severally have made, and accordingly I have brought all our figures to an arbitrary standard and have figured them on a basis of a volume of business, the cost value of which was $1,000,000. All my tables of figures have been brought to that proportion. The results are the actual percentages of cost which prevail in the Rochester division of our business. I have not as yet worked it out with the same detail in the other branches.

The total cost of doing business, excluding rent and interest charges in the Rochester branch of our company for the year ending July 1, 1910, was 11 1-5 per cent. of the cost value of the goods sold. Formerly we should have been satisfied to know that fact and to let the matter rest right there, but in accordance with our search for more detailed information we pushed the inquiry further. We therefore separate our expense account into five

RAINBOW RUBBER BELTING

FRICTION SURFACE—SEAMLESS



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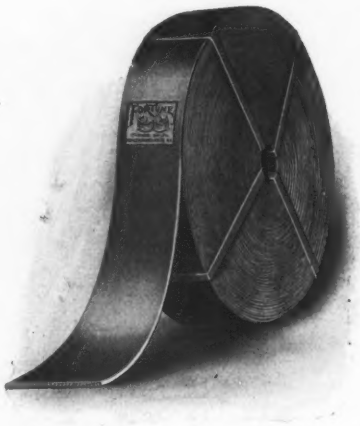

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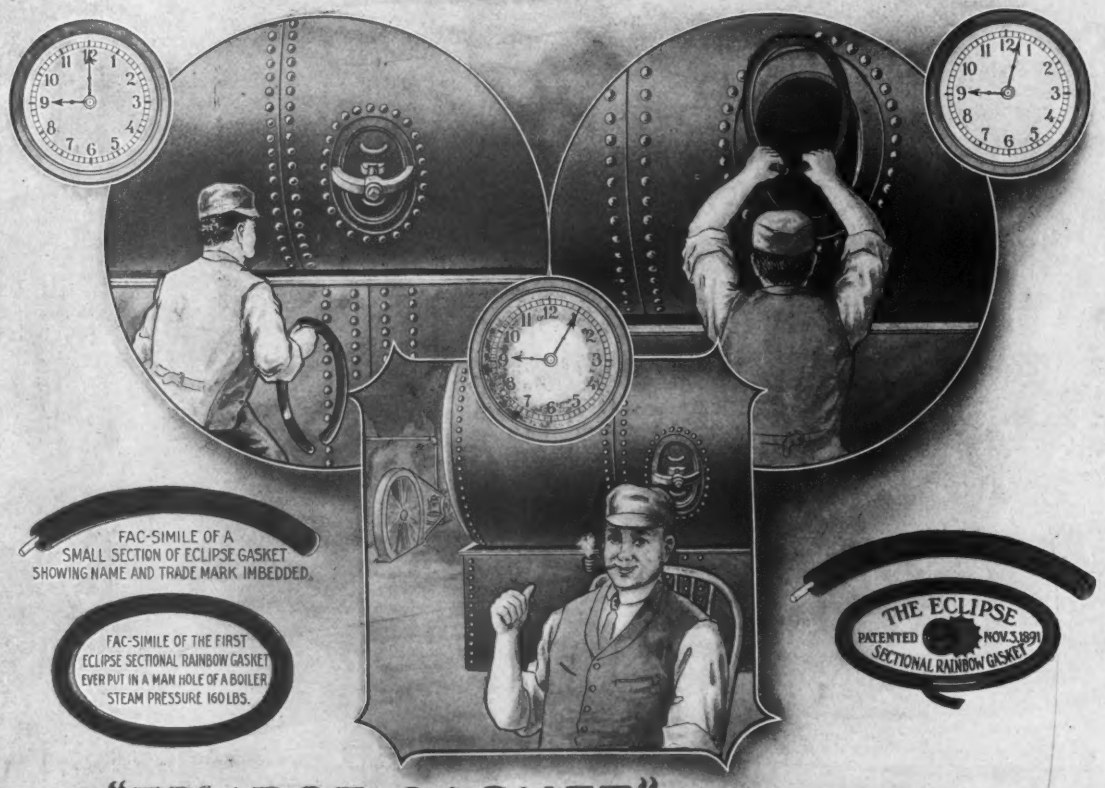
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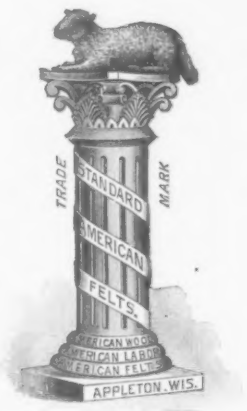

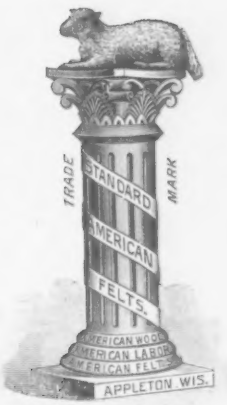

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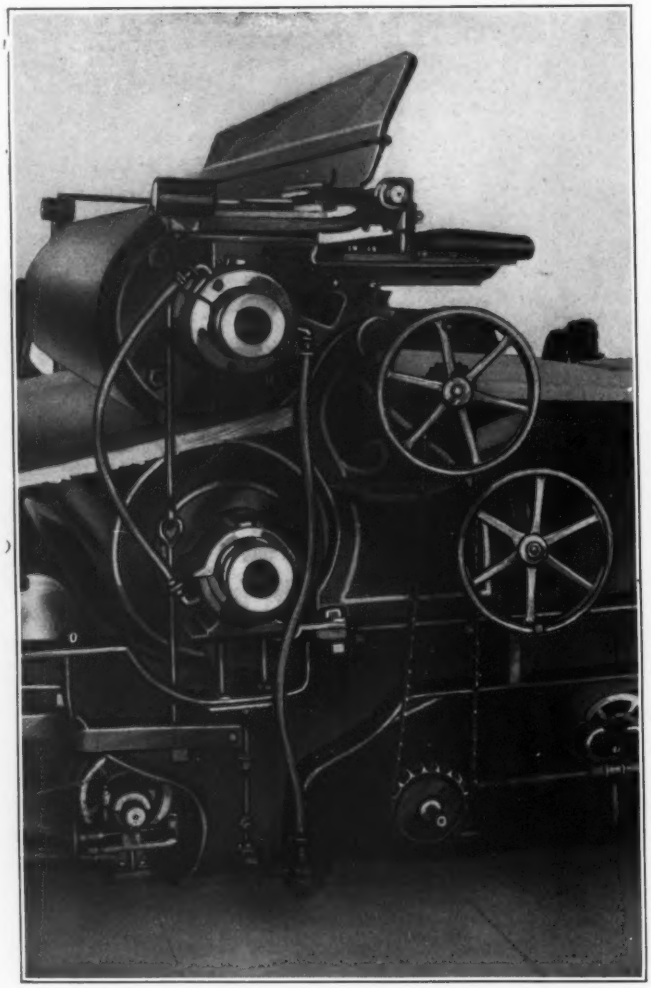

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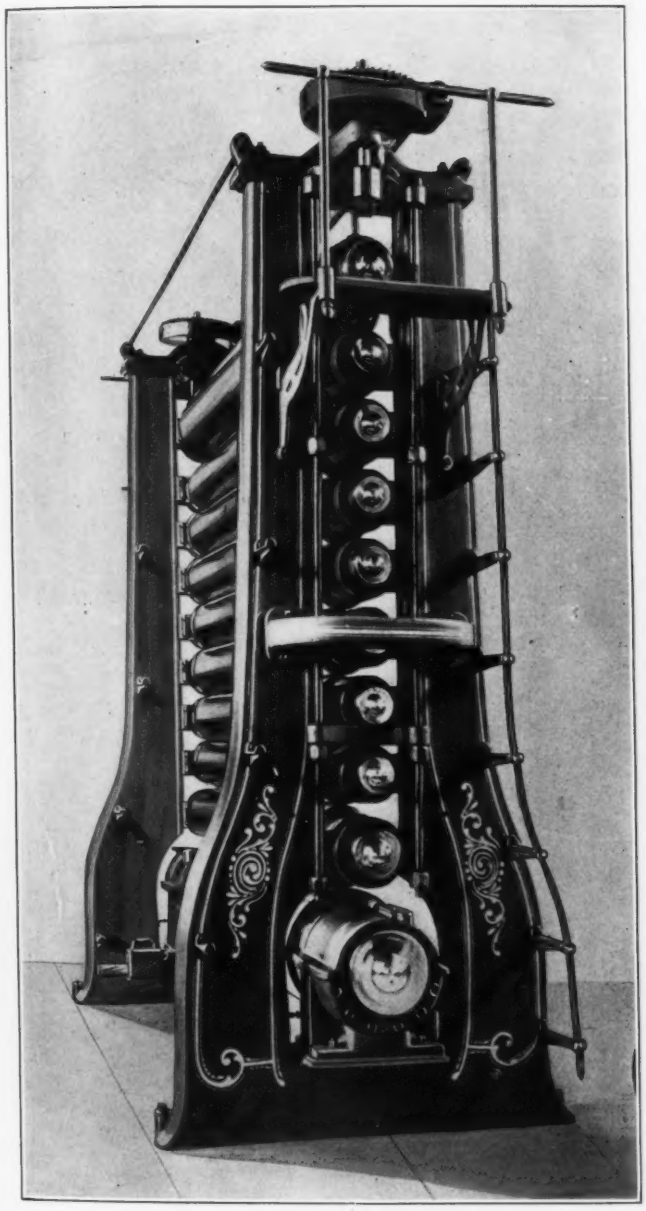

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divisions, to which we have already alluded, charging to each those items of the expense which we thought they ought to carry. Analyzing our total cost of 11 1-5 per cent. and making corrections for special contracts, as will be explained hereafter, we believe our costs are as follows:

	Per Cent.
Average selling cost	6 5-10
Average office cost	2
Average storage cost	4 4-10
Average delivery cost	¾

We subsequently analyzed the selling cost of our business to be 3¾ per cent. for selling average goods in our home city and 11½ per cent. for average goods sold outside of our home city. I will next attempt to give the method of securing these percentages.

In the first place, the salary and wage account was analyzed and the wages of each person charged to that part of the business in which the individual was employed. There are in our company a good many individuals who divide their time between different duties. In such cases a careful estimate of their duties was made and the proper proportions of their salaries charged to the various departments. Items that should go to general administration like supervision, in which the general officers of the company spend a portion of their time, were charged in the first place to a fifth division called administration, which included also its proper share of postage, clerical help and other items of expense. The wages of stenographers, who are doing general work, were assigned either to the selling, the office or the administrative departments, according as they were doing the kind of work belonging to those departments. All the other items in the expense account were treated in the same way, such division being made according to the very best records or estimates that we had as to where they actually belonged. We included the cost of purchasing goods in the selling department. It may be that others would prefer to put the cost of that operation in general administration or to form a separate division for this purpose, which could be done, of course. We thought it was better to include it with the selling, because all goods sold had to be purchased, whether they went direct from the mill or whether they came first to the store and were sold out of stock.

An Analysis of the Expense Account.

After the analysis of the expense account the different sections footed up as follows: Administration, $23,178, which we divided as follows:

To selling	$9,600
To store	9,600
To office	3,450
To delivery	528

This division was made because we estimated that the time consumed in the general duties of supervision was spent in about these proportions. Some one may say that these are estimated instead of actual figures. It is doubtless true that our final figures contain many items of estimate, but if we get down to a close analysis and estimate the original items one by one, errors in our estimate will offset one another and we will secure a very much closer approximation to the absolute truth than if we make our estimates upon the totals, in which case they are a good deal more of the nature of a guess.

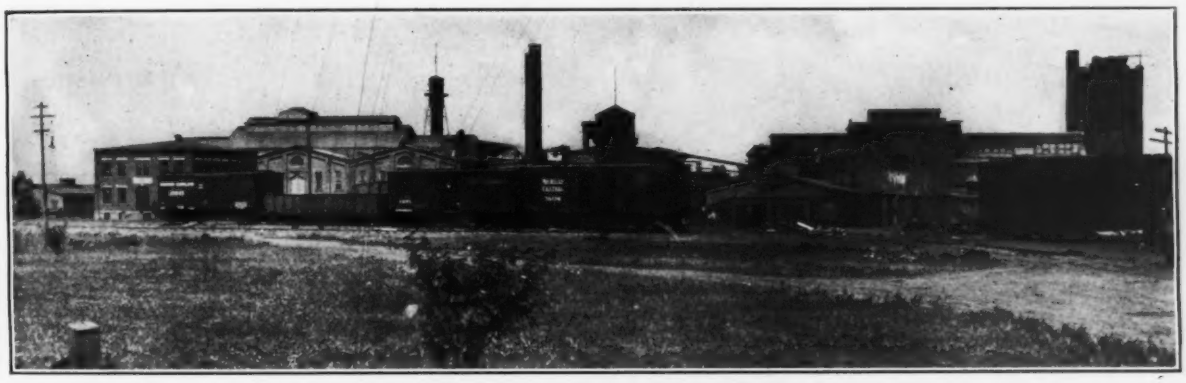
Our four main divisions figures up as follows:

Selling Cost, consisting of wages, traveling expenses, advertising, postage, etc., amounted to $55,608.87. This included one year's share in the cost of getting out quite elaborate sets of samples, which we estimated would be good for about four years' service, and the expense of which we therefore charged in that proportion to each year. This total cost also included its proper share of administration.

Office Cost, consisting of wages, postage, stationery and its part of the administration was $20,861.

Store Cost consisted of wages, cartage-in, insurance on stock and administration, and amounted to $28,254.96. Of course, the rent and interest charge would bring this up very materially, but we have left these out for the sake of general comparison.

Delivery Cost, consisting of wages, all cartage except cartage-in, and administration figured $7,028.



Plant of the Hammermill Paper Company, of Erie, Pa.

Having thus secured the amounts chargeable to the different departments, the next problem that confronted us was how to reduce these amounts to a percentage basis. We did not think it was fair, for instance, to divide the costs of the selling department equally upon the entire million dollars' worth of sales. Doubtless there is a differing cost for every sale, and we cannot get at any average which will be absolutely correct; nevertheless there are some classes of our sales that cost a great deal less than the average, and also some that cost more than the average. For example, cash sales out of stock do not cost us as much to sell as other kinds of sales, because in most cases they are sold to people who come into our office of their own accord, who do not have to be urged to buy, who pay down their money and take the goods away with them. Other cash sales are made through letters from parties who apply to us, and as soon as they get the price inclose us a remittance. Our contract sales also cost very much less than the selling of ordinary assorted business. We may make a number of trips to see the customer, may write him several letters and have considerable correspondence or even a trip to the mill upon the subject, but when that contract has once been secured the paper comes along at the rate of one or five or ten cars

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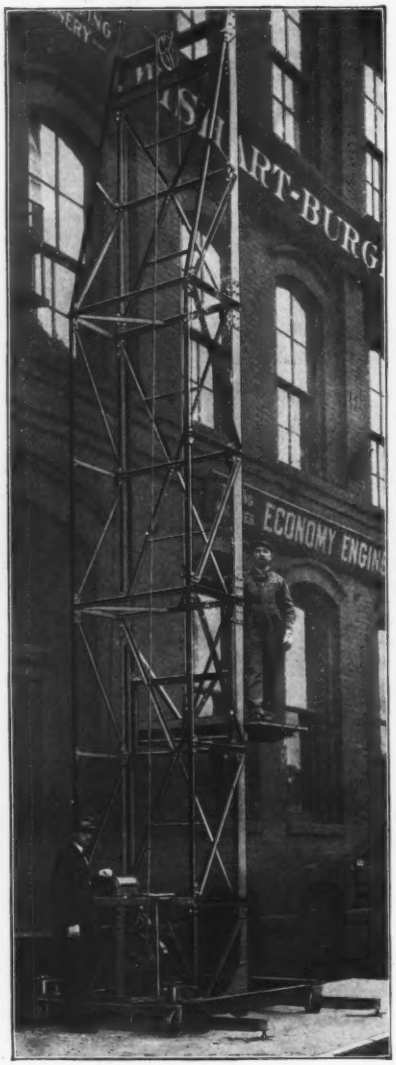

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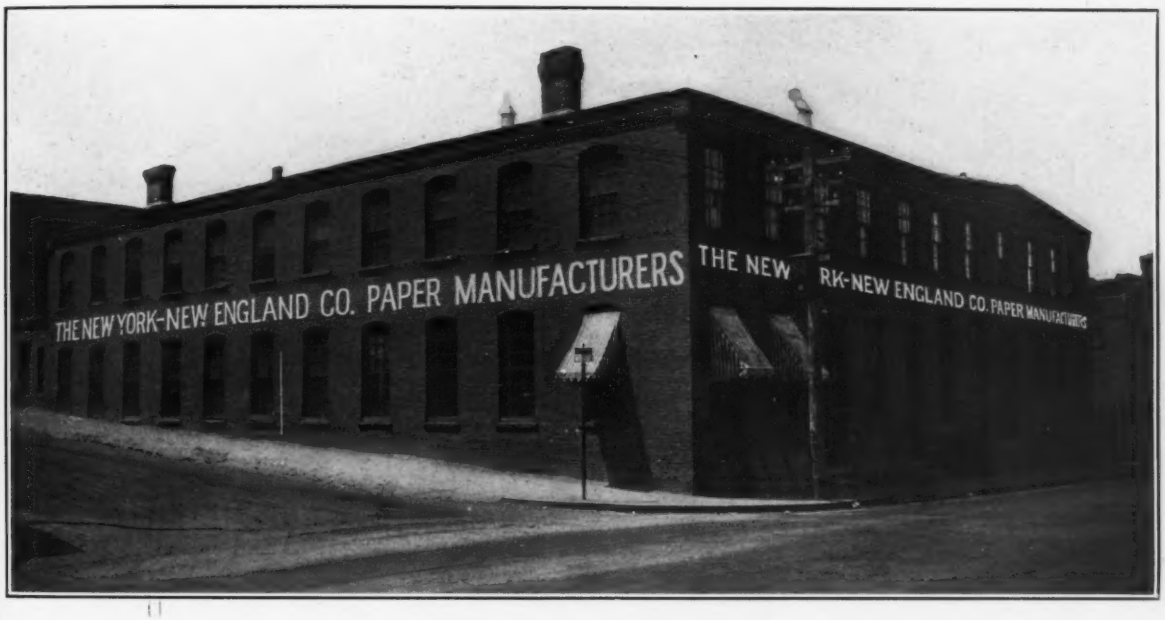

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a month, as it may be, and we merely have to have clerical oversight to see that the customer is kept supplied as he desires.

On this principle we went carefully over our sales and deducted from the million dollars' worth $189,490 worth of sales which we believed to be special and which had cost us so much less than the average sale that we thought they ought to receive special treatment. If we divided our total costs of selling by our entire million dollars' worth of sales we would get an average lower than the correct one for 90 per cent. of those sales, and we would therefore be misled by the same. In getting such an average we would be bound to consider that the special contract sales were lower still and would so estimate it when we were tempted to take business on a very small margin. We therefore felt that the only correct procedure was to treat these special sales in a special manner. If our cash sales cost us one-quarter as much to sell as other sales did, then we ought to extend those sales at one-quarter of their actual amount in getting at our total volume. If we believed that our different contracts, when separately considered, cost us one-half, one-third, one-fourth or one-eighth as much to sell as average business costs, then we ought to extend the amounts of those sales at one-half, one-third, one-quarter or one-eighth in the column of totals. Figuring in this way, the special contract sales of $189,490 were actually extended as $60,803 in figuring the per cent. of cost. Our million dollars' worth of sales, therefore, we reduced to $861,000, and by that amount divided the total selling expense of $55,608, thus securing the actual selling cost of 6½ per cent. to be spread on all our ordinary sales. If it cost one-quarter as much to sell a certain contract as it cost to sell general business, one-quarter of 6½ per cent. would be the amount to be charged up against that particular contract. Other contracts can be figured in the same way.

When our selling expenses were divided and applied to city and to foreign business respectively, and our special contracts treated in the above way for both kinds of sales, we found that the cost of our city sales was 3¾ per cent., while the foreign sales cost 11½ per cent., a most surprising difference and one suggestive of many interesting conclusions, the consideration of which we will defer until we have discussed the method of securing the percentage costs of the other divisions of the business.

Office Percentage of Sales.

Our method of getting the office percentage was very much the same. Our city and our foreign sales, whether contract or otherwise, were carried out in full. Our cash sales were carried out at one-quarter their total volume on the estimate that the office expense of the same was not to exceed one-quarter that of other items, there being no charging, posting or collecting involved. We also transferred to our other warehouses a considerable amount of goods which were not included in the volume of our sales and which we charged to these branch warehouses at cost. The charging and billing of these goods had to go through our office, and therefore increased the volume of business which the office had handled; but, of course, there was no expense for the rendering of statements and for the collecting of the account. We estimated the office expense of these transferred goods to be one-half the regular expense, and therefore added to our final column of figures one-half the amount of their actual value. The business, therefore, then went through our office totaled $1,050,289, securing the percentage of office cost of 2 per cent.

In estimating our store costs we followed the same plan. We eliminated the sales that went direct to the customer from the mill and put down only the total of city and of foreign sales that we delivered out of stock. We added to this amount the total volume of the goods transferred from our warehouse to our branch warehouses, less the goods which they had shipped for us to our customers. The balance had been handled by our men and its volume must, of course, be taken into account in getting the percentage of cost of handling the goods. Following this method our store expense of $28,255 was spread upon $644,913 worth of goods handled, showing a percentage of cost of 4 4-10 per cent., exclusive of rent and of interest charges.

Our delivery costs were figured on the same plan, taking into account only those goods which actually had to be carted out to customers or to the cars, and those direct shipments which we took at the cars and delivered to our customers in our home city. We added all the goods which we shipped to our branch warehouses, as we had to cart all those goods from our warehouse to the cars. We therefore divided our delivery cost of $7,028 over $935,272 worth of goods delivered—the percentage of delivery cost being ¾ of 1 per cent. This is doubtless very much lower than similar expenses of some other houses. Remember that we have not included in this the cost of any cartage on incoming goods. Our incoming cartage expense is very small, as we have a railroad switch and our goods are landed on our own platforms. The occasional cartage costs which we have to pay on roads where we

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cannot get switching we have added to the expense of our store goods.

CAN TELL WHETHER WE ARE MAKING OR LOSING MONEY ON INDIVIDUAL SALES.

We have now ascertained the percentage costs of doing business which enable us to find out whether we are making or losing money on any individual sale or account. Let us put these figures together and estimate the cost of doing the different kinds of business. If we sell an assorted bill of goods from stock to a customer in our home city, the expense would be figured as follows:

	Per Cent.
Selling	3¾
Office	2
Store	4 4-10
Delivery	¾
Total	10 9-10

—besides rent and interest. It is easy to see how much profit there is in selling out of stock to a city customer twenty reams of book paper at 4 cents a pound when the paper cost us $3.80. If I am correct in my percentage costs, it has cost us over four-tenths of a cent a pound to sell and deliver the above mentioned paper, and if you include rent and interest you will have at least another one-tenth of a cent per pound to be added to your costs.

Therefore, your gross profit of 20 cents per hundred pounds is brought face to face with a gross cost of 50 cents per hundred pounds, and your supposed profit has turned out to be a loss.

Assorted goods sold to an out of town customer cost still more, because the much larger cost of out of town selling must be added. Such items figure us as follows:

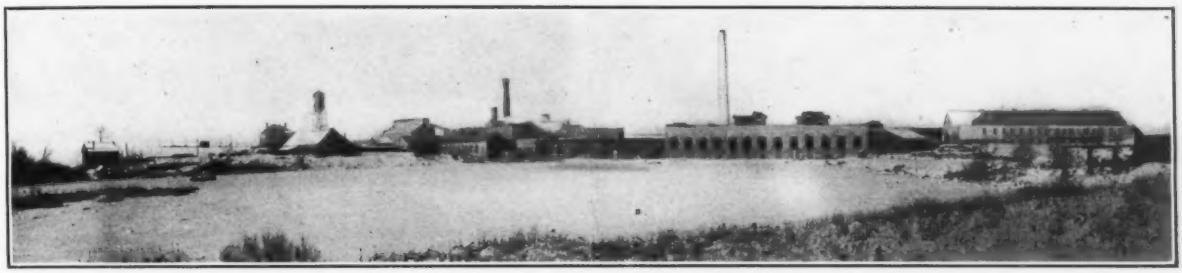
	Per Cent.
Selling	11½
Office	2
Store	4 4-10
Delivery	¾
Total	18 7-10

almost—besides the rent and interest charge. On the other hand, if we sold an ordinary bill of goods direct from the mill, the item of store cost is eliminated. Such a bill sold to a customer in our home city would cost:

	Per Cent.
Selling	3¾
Office	2
Delivery	¾
Total	6½

Now you may ask me, as one of our traveling salesmen did recently when these costs were shown to him, "Do I understand that if I sell a carload of board or paper on a margin of 5 per cent. that I am losing money for the house?" I answer him as I answer you, that he was not losing money, because the sale was probably made in very much less time and at much less expense than it would take to sell the same volume of assorted goods, and that the sales cost of that carload was therefore much below the average sales cost above developed; but I called his attention, and I call your attention, to the fact that if the sales cost of carloads and of similar large items is below the cost we have obtained we must not forget that the sales cost of the rest of the items was inevitably considerably above the average. If, therefore, we are able to make a profit selling carloads at 5 per cent., we cannot sell any considerable proportion of our goods to general customers at that rate of profit on their assorted sales, for on any such proportion as that we would be manifestly losing money. The office expenses of a carload shipped direct from the mill would cost less than the average also if the car were made of one or two items; but, as said above, these things only emphasize the fact that since they are included in our total volume, which we used for the purpose of securing our percentage of costs, a large proportion of our business costs show a good deal more than the average percentage which resulted.

There is another item of cost which we have not yet computed, and that is the wastage which comes from soiled, wrinkled or otherwise spoiled sheets. How much this wastage is we do not know, but we must unquestionably add something to our cost of doing stock business on account of this item.



GENERAL VIEW OF THE PLANT OF THE KATAHDIN PULP AND PAPER COMPANY, LINCOLN, ME.

SOME LINES MORE EXPENSIVE TO HANDLE THAN OTHERS.

Up to this point in the discussion we have not attempted to find out how much more it costs to do business in one kind of goods than in another kind. Let us attempt a little analysis in that direction.

There are three things that would make one line of goods more expensive than another line:

First—The difference in the wage cost of lifting, piling, counting, packing, etc.

Second—The difference in the amount of square feet of room that it takes in the warehouse, and consequently in the charge for rent, that should be made against the line.

Third—The difference in the amount of interest charged that should be made against any line as part of the cost of carrying. This would vary with the amount of stock and with the volume of sales.

We have not as yet been able to find out how much more in wages its costs to handle one stock than another, but we have learned a great deal which has been of volue to us without considering that item.

We have figured carefully how much space with rent at a uniform amount per square foot. We have next taken the average stock on hand of the same line, as per our inventories, and have charged interest on that amount. The sum of the rent and the interest charge we have divided by the total amount of the same line sold within a year in order to get at the per cent. of the cost of carrying that line. When we apply the same method to different

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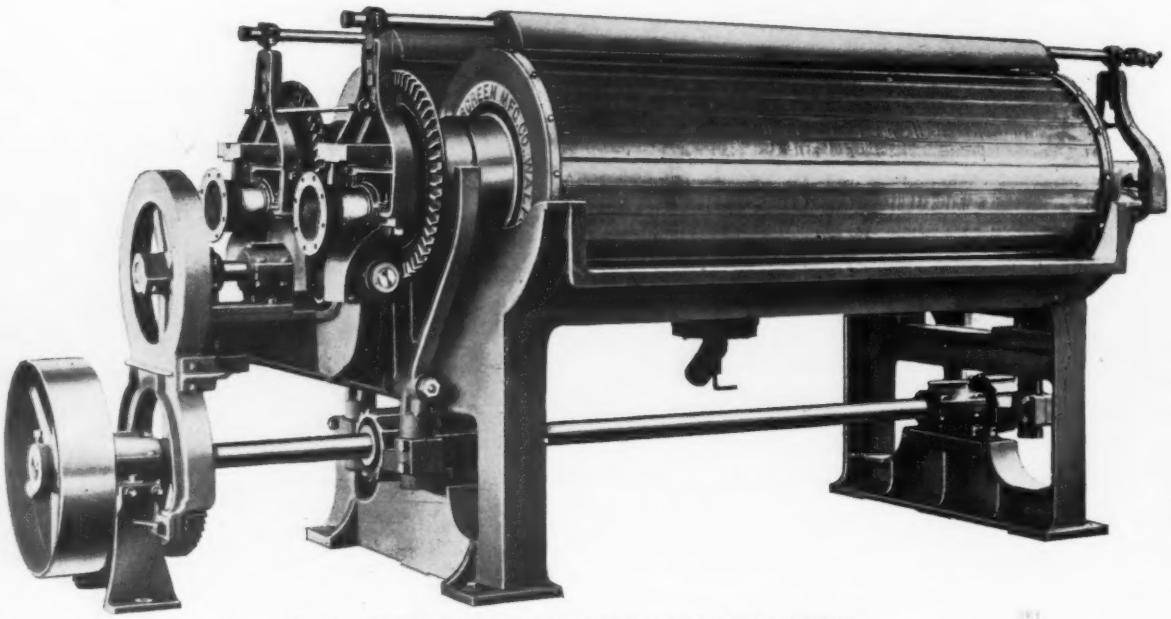
Walpole,



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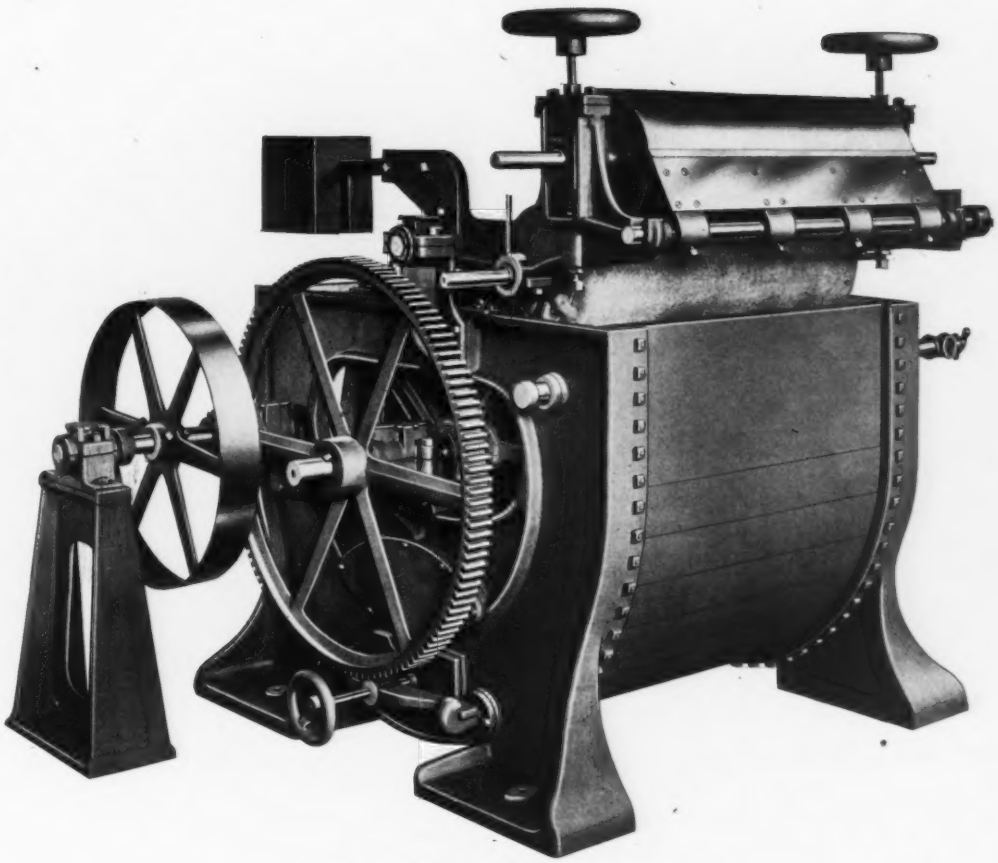

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PULP AND PAPER MILLS. WATER, STEAM AND ELECTRIC POWER DEVELOPMENT. EXAMINATION OF PROPERTIES, CONSULTATION REPORTS.

41-42 SMITH BUILDING, WATERTOWN, N. Y.

lines of goods we can readily see how much more one costs than another. Let me illustrate what I mean. We carry a certain line of enameled book, of which our average stock is $5,500 and which occupies 1,400 square feet of floor space in our warehouse. The interest of $5,500 at 6 per cent. is $330 per annum; 1,400 square feet at 25 cents a square foot is $350. Our sales for this particular line of paper for a year were only $12,500. Hence the charge for interest and rent was 6½ per cent. in addition to all the other charges which we have been talking about. Some of us perhaps figure our rent at less than 25 cents per square foot; many of us figure it at more than 25 cents, but that amount will answer to illustrate our point. On this basis of 25 cents a foot we have found that our lines cost us the following percentages for rent and interest of carrying:

	Per Cent.
Book	5½
Enameled book	60
Print	6
Cover	6½ to 10
Flats	6½
Cards	6½
Bonds	6½ to 12
Twines	7½
Wrappings	8 to 12
Bags	12

The examination of these rent and interest charges enables us to see whether we have too much stock on hand of any particular line in proportion to its sales. For example, we had a certain line of cover paper which used to be one of our best sellers. We carried a large variety of colors, weights and finishes, and consequently had a large charge, both for rent and for interest. Within the last year or two the sales of this line have begun to run down, but until we applied this method of calculation we did not realize that we were making a great mistake in keeping the same amount of stock on hand in spite of the smaller sales, and that in consequence thereof our cost of handling that line was rapidly rising. You can readily see that we must do one of three things—either decrease the stock, and so lower the charge for rent and interest, or increase the volume of sales, or else raise the margin of profit by increasing the price. This explains the reason why our cover papers varied from 6½ to 10 per cent. in cost for rent and interest.

THE COST OF CARRYING THE DIFFERENT LINES OF BOND.

You may have noticed also a wide variation in the cost of carrying different lines of bond paper. We have discovered that the lines of which we carry the largest variety of shades and weights in proportion to the sales are the lines which cost the most for rent and interest, because the addition of the large number of extra items to the lines does not increase the sales in proportion to the costs. This was one of the surprises to us, for our theory had been that the more complete the line the more it attracted business, and, therefore, increased our profit. We believe that it is an unwise custom to carry full lines of colors in all the weights and in all qualities, and that while every house must have an assortment of colors in some qualities, it must refuse to stock a full assortment in many other lines, or else largely increase its cost of doing business. Every well managed department store makes each department of its business stand on its own feet, and expects it to make money independent of all other departments. We are attempting to examine all the lines of stock that we carry in the same way, and if we find the cost of handling some line has risen to a point where it more than absorbs the margin of profit which we get on that line, we must frankly face the question: how to reduce the cost. If we can stop the small leaks in our business we shall have a very much more satisfactory grand total at the end of the year. One of the curious items that we found in this analysis was that our envelopes have not cost us as much to sell as our flat paper has. The figures which some other jobbers have made have almost invariably indicated a larger cost for envelopes, and we had supposed that they would be so in our case; nevertheless, tested by the same methods which we have applied to other stock, our envelope cost is less than card or writings. In our case it is because we have been able to secure a considerable volume of sales without carrying a very heavy stock of goods, which has resulted in lowering the percentage of cost of handling.

NEW BOILER HOUSE OF MENASHA PAPER COMPANY AT LADYSMITH, WIS.

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This investigation that we have made has taken a good deal of time and attention, but we feel that we are already more than repaid for the same. We are going through our stock and examining it in great detail, increasing some lines as sales warrant it and decreasing others as sales do not warrant the amount of stock we have carried. We expect that we shall be able to decrease our stock nearly 10 per cent. in values, and at the same time please our customers just as well, and make more money at the end of

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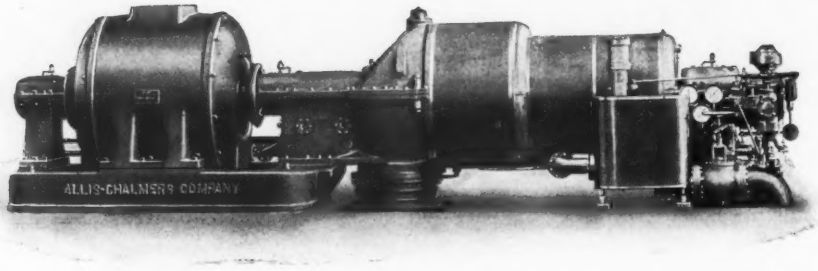


Allis-Chalmers Steam Turbine

Information from a Disinterested Source

regarding the operation of Allis-Chalmers Steam Turbines may be more convincing to you than any advertisement. Such information can readily be obtained from any user in your neighborhood. If you do not know the location of any such installation we will be glad fo furnish you with a list of the users in your vicinity.

Allis-Chalmers Steam Turbines have proven economical and reliable under all conditions of service. They are sold on their operating record.

Allis-Chalmers Company

Offices in all the Principal Cities.

the year. We do not intend to be hasty in deciding about these matters, because the sales of any particular line will vary somewhat from year to year, and therefore will change the ratio of costs; but we are appreciating more and more the great value of knowing the facts and of looking them squarely in the face. For many years we have made an analysis of our monthly purchases, and have known just how much of each particular line of bond, cover, book, coated, blotting, etc., we were buying. It has been of interest in the past chiefly for comparison with previous years. It has now become indispensable in showing us how much it is costing us to carry these different lines, and whether we are making any money whatever in selling them. Doubtless all paper men have kept some lines of goods on which they make as little as grocers do on sugar, or as dry goods stores do on cotton cloth, but through our method of ascertaining costs we know just which these lines are, and can reduce their losses to a minimum, and at the same time know where to apply our most earnest efforts in order to make profit.

A Large Volume of Sales Not Everything.

If there are any firms who entertain the notion that a large volume of sales is the chief thing to be desired, and who set out to secure that by underselling everybody else and by quoting goods on a 2, 3 or 5 per cent. margin, the above figures will readily show them the reasons for the lack of a satisfactory profit at the end of the year, and will save them from wondering what the matter is. They cannot cure this trouble by starting out on the new year to get a still larger volume of sales on the same old basis. The only way will be for them to establish a cost school for their fool salesmen, and if they cannot educate them fill them.

A year ago I read to this body a paper recommending that jobbers withdraw their resident agents from cities which were well supplied with home jobbing houses, on the ground that such agents could only secure general business by cutting the price that prevailed in those cities. I suggested that such towns could be covered more profitably by traveling salesmen, who might secure at a reasonable price such business as would come to them for friendship's sake or as would come because of larger stocks or better quality. It seems to the writer that the figures which have been developed in this investigation of costs only add another reason for the carrying out of that policy. If our figures are right it costs a house 3¾ per cent. to sell goods in its own town, while it costs some foreign house 11½ per cent. to come into that same town and sell those same goods. When you add that additional percentage to the cost, and also take off from the price the amount deducted from the market price to make the sale, it would seem to show to the satisfaction of the writer that there is comparatively little profit made in extending our business in that way. We might as well all of us recognize that we can make more money by working our own territory more thoroughly, rather than by too eagerly seeking fields of conquest farther from home.

Some Houses Want to Do All the Business.

Just a word or two in conclusion. Occasionally an epidemic arises in a city and all the inhabitants for the time being run a greater danger of sickness than they do under ordinary conditions. Every endeavor to stamp out that epidemic is a help, not only to the local community, but to all other communities through which the epidemic may spread if not properly controlled. All of us in the paper jobbing business are occasionally exposed to the danger caused by a fit of foolish ambition on the part of a few houses, who think themselves entitled to sell about all the goods that are used in the country, and who go out and at least try to do this by invading everybody else's home territory. See what the result is. For the time being such a house secures a considerable amount of additional business by the process of price cutting. Business which has paid the home jobber 15 per cent. is grabbed by the fool jobber on a basis of 5 per cent. After a little while we all get indignant and do as the Romans did when hard pressed, carry the war into Africa, by invading the home territory of the firm temporarily afflicted with the "big head." We then secure more or less business at a very low margin of profit, which our competitor has heretofore been holding at a fair profit, and the volume of business is pretty nearly evened up. Now see what has happened. There has been no new business created; no more paper is being used than was before this foolish competition arose, but we have simply swamped a considerable amount of business on which we were making a good per cent., and each of us has received in turn some new business on which he is making a very small per cent. of profit. It has been practically impossible for the jobbers to show some people the folly of such a course. In the judgment of the reader, however, it shows conclusively that such houses have no conception of what it costs them to do business, and that they are centering all their efforts on enlarging the volume of their sales rather than trying to build up a business that shall be profitable as well as large. The meeting then adjourned to Thursday morning, February 16, at 10 a. m.

The Delegates Present

The following is a list of the delegates from the constituent associations:

New England Paper Jobbers Association.—W. F. McQuillen, Thomas N. Cook, A. M. Eaton, F. S. Arnold, C. S. Proctor, A. M. Burr, J. Richard Carter, Jesse Swift, A. C. Hall, Hubert L. Carter, M. H. Warren, H. W. Carter, W. P. Livermore, F. W. Power, J. B. Forsyth, A. W. Blackman.

Central States.—Franklin E. Miller, Arthur H. Smith, M. E. Battles, Robt. F. Droppelman, P. H. Clifford, Thos. F. Smith, J. E. Stevenson, F. J. Ostermeyer, E. A. Petrequin, A. Laurence Smith, Albert M. Miller, C. N. Bicknell, D. C. Culbertson, E. F. Evans, Albert Diem, A. E. Stevens, Jas. G. Cornell, Jr., R. A. Patrick, A. T. Nesbitt.

Empire—Jos. T. Alling, W. L. Van Alstyne, Oliver G. Bauman, B. A. Judd, Wm. E. Ebbitt, G. A. Manz, F. L. Sutzman, M. L. Kratz, R. F. Thompson.

Northwestern.—John Leslie, E. J. Stillwell, F. L. McClellan.

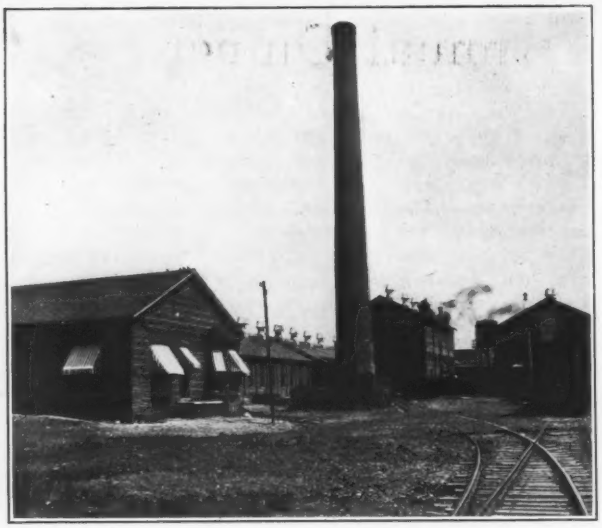
Paper Trade Association of Philadelphia.—Leonidas Beck, J. L. N. Smythe, J. Allan Donaldson, Elliott B. Silver, R. C. Osburn, H. C. Platt, H. C. Davis, Thos. J. Hare, David Lindsay, Jr., A. J. Bankerd, A. E. Whiting.

Paper Association of New York City.—F. W. Wilson, Geo. F. Perkins, Jr., Fritz Lindemeyr, N. L. R. Gardner, Chas. Addoms, Chas. F. Hubbs, John F. Post, Jr., E. E. Wright, Spencer Lathrop, Kit S. Warner, Chas. Bridge, Wm. A. Underhill, J. C. Mallalien, C. W. Ballard, W. M. Pringle, Wm. D. May.

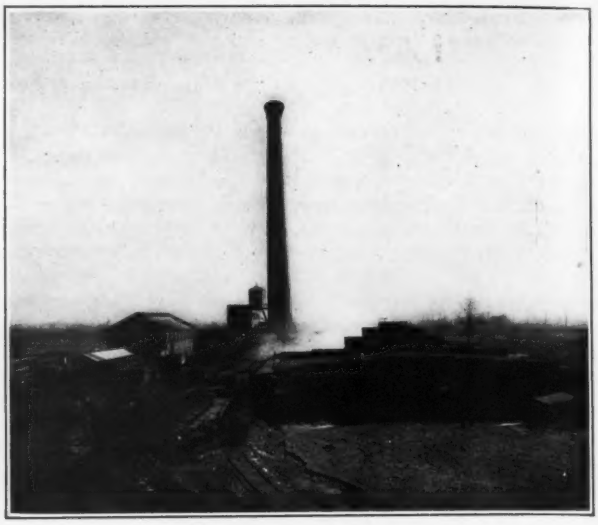
Western.—W. C. Gillette, E. A. Mason, E. U. Kimbark, C. K. Freeman, J. W. Carpenter, James White, I. W. Carpenter, Jos. Joyce, Geo. Olmsted, O. F. Etnier.

Baltimore and Southern Paper Trade Association.—W. B. Littleton, Chas. W. Beers, J. Albert Robins, James Meikle, Cleveland Manning, W. M. Donaldson, S. T. White, Henry Wellhouse, R. P. Andrews, Philip Lindemeyr, B. F. Bond, H. Newton Schillinger, B. W. Wilson, J. W. C. Merkle, R. L. Mathers, J. E. Bradley.

Parsons & Whittemore, 174 Fulton street, New York, have announced to the trade that Herbert P. Brock has entered their employ to handle paper mill supplies, with which business he has been connected for many years. He will offer wood pulp, new and old rags, old papers, etc.



Lafayette Box Board & Paper Co.
C. A. Chapman, Inc.
Engineers



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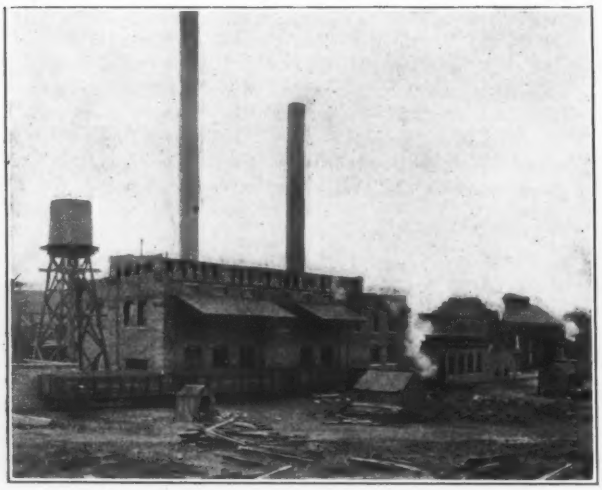
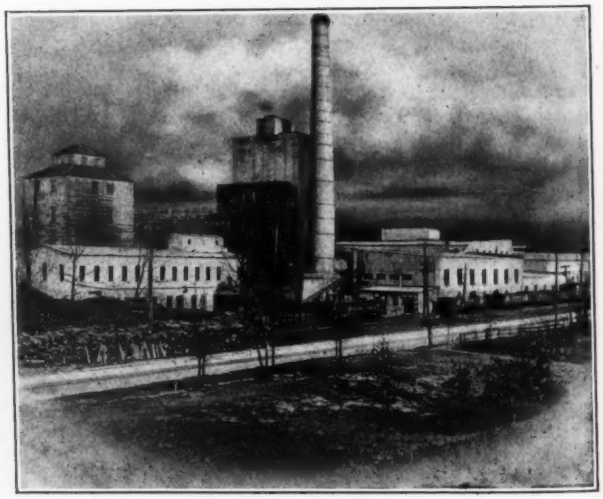
Special attention given to increasing operating economies and production. Modern mill design, construction and equipment.

39 Jackson Boulevard CHICAGO, ILL.



Partial View of U. S. Board & Paper Co.'s Plant
C. A. Chapman, Inc.
Engineers



Central Paper Co.
C. A. Chapman, Inc.
Engineers

Dealers Hold First Annual Dinner

HOTEL ASTOR, New York, was the scene of the first annual banquet of the National Paper Trade Association. The success of the dinner, which was assured from the start, must have been as gratifying to the committee as it was delightful to the guests whose good fortune it was to meet and enjoy themselves in a thoroughly substantial manner. Those in charge undertook to furnish an entertainment of high order, and they succeeded to the utmost of their expectations.

The large assembly room of the hotel was completely filled, but not uncomfortably crowded, and the dinner was marked by two departures from the general custom in respect to trade banquets. Ladies were there in liberal numbers, and their presence contributed largely to the pleasure of the evening. They entered into the songs and general festivity with a vim that fairly made the fun sparkle and bubble over. There being no speeches, there was no speakers' table; instead there was an excellent vaudeville performance upon a stage at the head of the room. The artists, who included Miss Kitty Cheatham, Master Josef, the boy violinist, Miss Grace Hazard, the Van Baar Orchestra, and others, were all of the highest type, and easily won the good graces of a most appreciative audience.

The dinner was enlivened by the singing at intervals of popular songs under the leadership of the Knickerbocker Male Quartette.

Those present were:

A—A. A. Adams, Mr. and Mrs. Everett Addoms, Mr. and Mrs. Charles Addoms, Joseph T. Alling, R. P. Andrews, F. S. Arnold, Miss Gladys Arnold, Miss Harriet M. Arnold.

B—W. O. Ball, C. W. Ballard, Mr. and Mrs. A. J. Bankerd, Mr. and Mrs. M. E. Battles, Oliver G. Bauman, Leonidas Beck, Chas. W. Beers, Ernst R. Behrends, C. F. Beyerl, Mr. and Mrs. C. N. Bicknell, A. W. Blackman, B. F. Bond, J. E. Bradley, Charles Bridge, Neill S. Brown, F. F. Burkhart, Arthur M. Burr.

C—Harry Caplin, Mr. and Mrs. S. Caplin, Mr. and Mrs. I. W. Carpenter, A. P. Carter, H. W. Carter, Carter, Rice & Co. (2), John A. Church, Cincinnati Cordage and Paper Company, P. H. Clifford, A. D. Coffin, H. R. Coffin, Grellet Collins, Henry H. Collins, Jr., James G. Connell, Jr., Miss Ruth V. Cook, Thomas N. Cook, D. C. Culbertson.

D—Miss Donaldson, Mr. and Mrs. J. Allan Donaldson, William M. Donaldson, John J. Dorsey, J. S. Dresskell and guest, Mr. and Mrs. Robert F. Droppelman, Mr. and Mrs. A. E. Dubey, C. A. Dunklee.

E—Mr. and Mrs. P. W. Eason, Mr. and Mrs. Albert M. Eaton, C. T. Elliott, Henry Emery, Mr. and Mrs. A. W. Esleeck, E. F. Evans, J. M. Sharpless Ewing.

F—Francis G. Flint, James B. Forsyth, Mr. and Mrs. C. K. Freeman.

G—N. L. R. Gardner, J. W. Gilkey, W. C. Gillette. Mr. and Mrs. Ralph Green.

H—Mr. and Mrs. Arthur C. Hall, Miss Harbison, Thomas J. Hare, J. K. Harriman, H. L. Harrington, Mr. and Mrs. H. F. Harrison, Mr. and Mrs. Arthur C. Hastings, H. C. Henihey, Miss Virginia Hilleary, Mr. and Mrs. William H. Holden, N. R. Hopkins, Charles F. Hubbs.

J—Mr. and Mrs. George T. Jenkinson, Mr. and Mrs. A. T. Judd, B. A. Judd.

K—Kansas City Paper House (3), R. C. Kastner, E. U. Kimbark, Mr. and Mrs. M. L. Kratz.

L—Mr. and Mrs. Spencer Lathrop, Alfred Leeds, John Leslie, David Lindsay, Jr., R. W. Linton, W. B. Littleton, John G. Luke.

Mc—Mr. and Mrs. F. L. McClellan, Mr. and Mrs. George McKee, Mr. and Mrs. C. W. McKernon, George McKinney, C. I. McNair, Mr. and Mrs. W. F. McQuillen.

M—B. B. Magargee, J. C. Mallalieu, Mr. and Mrs. G. A. Manz, E. A. Mason, George H. Mead, James Merkle, Joseph W. C. Merkle, Mr. and Mrs. E. J. Merriam, Mr. and Mrs. G. Frank Merriam, Albert M. Miller, Franklin E. Miller, John H. Miller, John A. Morison.

N—J. Nacht, A. T. Nesbitt, A. H. Nevius, D. A. Nicholson.

O—Mr. and Mrs. D. J. O'Connell, George Olmsted, R. C. Osburn, F. J. Ostermeyer.

P—Paper, Inc., THE PAPER TRADE JOURNAL, The Paper Mill, The Paper Maker, Mr. and Mrs. George F. Perkins, Jr., Mr. and Mrs. W. E. Perry, E. A. Petrequin, Miss M. Phillips, H. E. Platt, C. H. Preston, Charles S. Proctor, L. E. Pullen.

Q—D. L. Quirk.

R—W. J. Raybold, Mr. and Mrs. Wm. C. Ridgway, J. Albert Robins, Mr. and Mrs. Albert Roe, H. V. F. Roe.

S—H. Newton Schillinger, Mr. and Mrs. Frank J. Sensenbrenner, Mrs. R. K. Sheldon, Ellott B. Silver, G. W. Sisson, Jr., Mr. and Mrs. Arthur H. Smith, Thomas Floyd Smith, J. L. N. Smythe, O. M. Steinman, Mr. and Mrs. Arthur E. Stevens, J. E. Stevenson, E. J. Stilwell, John E. Stonebraker, Jr., George Sullivan, J. G. Swift and guest.

T—James B. Thayer, A. C. Thomas, James Thompson, R. H. Thompson.

U—C. K. Urquhart.

V—Mr. and Mrs. W. L. Van Alstyne.

W—Mr. and Mrs. E. C. Walker, D. S. Walton, R. L. Walton, Mr. and Mrs. Kit S. Warner, M. H. Warren, James White, S. George White, Mr. and Mrs. Charles W. Williams, Mr. and Mrs. B. W. Wilson, F. W. Wilson, Mr. and Mrs. E. E. Wright.

The above cut shows a little less than one-half the length of the dam recently completed by us for the A. E. Reed & Co. of Newfoundland, Ltd., at Bishop's Falls, Nfd., George F. Hardy, of New York, consulting engineer.

The maximum height of this dam is 51 feet, and its total length 801 feet. Work was started May 13, 1910, and the dam was completed in every detail on October 15—a period of 155 days. A 4 foot flood passed over the crest of the dam within ten days after closing it, and the photograph was taken at that stage of water. The Pulp and Paper mill is seen in the distance. It is probable that no such record has ever been made in building a piece of hydraulic work of that magnitude. The speed of execution was all the more remarkable from the fact of the distance of the site from a base of supplies.

An important fact is that the dam was built well within its estimate of cost.

DURING THE YEAR 1910 WE BUILT THIRTEEN DAMS of which the majority were large and important structures, ranging from 51 feet to 125 feet in height, and from 450 feet to 1,023 feet long—the most of them with contained power houses. Several of those dams are built on foundations of indurated sand, clay, etc., etc. A notable example is the dam now under construction for the Canadian Pacific Railway, at Bassano, near Calgary, Alberta. This dam is 51 feet high and 720 feet long. It is designed to pass a maximum flood of 100,000 cubic feet per second. The notable feature is in the fact that the foundations for this important structure consisted of 3 feet of loose gravel overlaying about 15 feet of clay supported on sand of an unknown depth. It is probable that no such difficult piece of engineering has hitherto been undertaken as to build a dam of such magnitude on foundations of this character.

In relation to the above work it is also interesting to note that while we were building the dam in Newfoundland on the east, and another in Alberta on the north, we were also building a dam 86 feet high and 995 feet long on the Pacific Coast of Oregon and a fourth 125 feet high and 440 feet long in Porto Rico. Sandwiched in between these were a number of other jobs in Georgia, Minnesota, Wisconsin, Indiana, Maryland, Kentucky and elsewhere.

We have demonstrated that we have the most efficient organization in the world for the execution of hydraulic construction.

Very respectfully,

AMBURSEN HYDRAULIC CONSTRUCTION CO.

ENGINEER-CONSTRUCTORS

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NEW PAPER MAKING FIBRE

Corn Stalks Have So Far Given the Most Promising Results

An Outline of the Recent Progress Made by the Government in Its Search for Wood Fibre Substitutes—Ways in Which Advances in Making Paper Are to Be Obtained

By Charles Richards Dodge.

Formerly Chief Special Agent in Charge of Government Fibre Investigations.

(Written for the Convention Number of The Paper Trade Journal.)

As the readers of this journal are doubtless aware, the rapidly failing supply of forest paper material has called the attention of the government to the necessity for discovering new sources of supply of paper making substances. During the past two years several appropriations have been made by Congress for the purpose of experimentation along these lines, and already a fair degree of progress has been made. The investigation work is under the immediate direction of Dr. N. H. Cobb, Technologist of the Bureau of Plant Industry, U. S. Department of Agriculture, assisted by Mr. Charles J. Brand, Physiologist, in charge of the paper plant investigations.

The Search for Wood Fibre Substitutes.

In the search for fibre plants—or fibrous substances, which will offer at least a partial substitute for forest woods, many well known species have been considered, as well as the waste products of the farm crops, such as maize and broomcorn stalks, sugar cane waste, or bagasse, rice and grain straw, and the unused fibre of the western seed-flax crop. Among cultivatable fibre plants may be mentioned hemp, jute, okra, cotton stocks, the Japanese paper-bark trees and others, while among wild plants which produce themselves in vast quantities in many parts of the country many species may be named, such as the different forms of rushes, ledges, canebrake—allied to bamboo—the yuccas and certain grasses flourishing in almost unlimited quantities in the bottom lands along our western and southwestern rivers, and along the sea-coast.

In the scheme of experimentation the field work is carried on at selected stations in Kentucky, Iowa, Illinois, Missouri, Kansas, Indiana and other states. Co-operation has also been effected with numerous private individuals, and with several offices of the Bureau of Plan Industry. The laboratory work consists of preliminary digestion of the various fibrous substances under experiment, in order to furnish a guide for semi-commercial tests at the paper mills, especially at the Cumberland Mills of S. D. Warren & Co., near Portland, Me., these tests being made under contract. One problem has been met with in connection with most of the raw materials under test, namely, the necessity of removing wholly, or greatly reducing, the relative proportion of the pith or parenchymatous cells. The long fibre resulting from the separation is suitable for the various grades of book and writing papers, while the pith pulp can probably be used in making paper and pulp specialties. In the laboratory work the optimum time of cooking, pressure, chemicals, etc., are determined, and hand-made sheets are produced for examination and testing.

Best Results From Corn Stalks, Maize, Etc.

Up to the present time probably the best results have been secured in experiments with the stalks of broom-corn, and with field-corn or maize. I am informed that broom corn stalks have given especially promising results, yielding in general a higher percentage of total fibre on raw material, and also a higher proportion of long fibre to pith than corn stalks. From 32 to 40 per cent. were regularly obtained in the laboratory and by semi-commercial tests, and later, in a large cooking of three and one-half tons, there was a yield practically, of 42 per cent., which the experimenters think can be safely counted upon in practice. Broom-corn stalks, like corn-stalks and some other waste crop material, yield under water extraction a product containing practically the whole food value of the raw material.

While very satisfactory results have been secured in experiments with the stalks of field corn, it may be well to note that many extravagant claims and statements have been put forth that absolutely cannot be realized and that do not have the sanction of the Department of Agriculture. Over a year ago it was demonstrated that good paper could be made from corn pith, and it may be fairly stated at the present time that after a general survey of the corn-stalk proposition, this material may be regarded as one of the most promising of the waste substances under experiment. It has been demonstrated that a ton of corn-stalks will produce 800

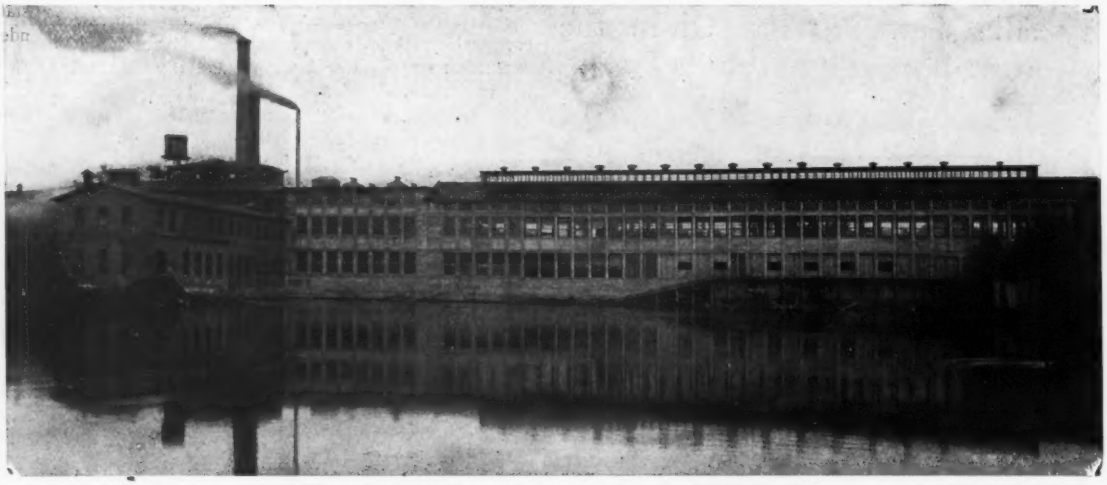
Charles Richards Dodge.

pounds of fibre, which I believe, is almost as good a yield as from forest woods by the sulphite process. With an annual corn crop covering millions of acres, from the Atlantic to the Pacific, an enormous supply of raw material is available, and the fact that the crop is so generally cultivated makes it possible to erect local mills in almost any state where it may be desired to establish the industry.

As the different species of the soft woods show differences in value as paper-making materials, differences in the fibre yield will also be found in the many varieties of corn cultivated, and hence, experimentation will be necessary to demonstrate the most valuable kinds to use for the purpose.

The Commercial Possibilities of Corn-Stalk Fibre.

Regarding the launching of the industry as a commercial proposition, little can be said at the present time. As in the case of every new thing, commercial progress must be slow, and such new enterprises can only be established at first in a small way. Another thing to consider is the fact that the present extensive wood-pulp



ANDROSCOGGIN PULP CO., SOUTH WINDHAM, ME.

Our past work for paper mills and our twenty years' experience in erecting all classes of concrete work is the strongest argument we can present as to our ability to do your work.

Among the paper mills for whom we have executed contracts may be mentioned:

Byron Weston Paper Co.	Parsons Pulp & Paper Co.
Crane Paper Co.	Keith Paper Co.
Woronoco Paper Co.	Shawmut Mfg. Co.
Pejepscot Paper Co.	The Katahdin Pulp & Paper Co.
Androscoggin Pulp Co.	Mittineague Paper Co.

At the present time we are building the dam, forebay, wheelpits, tailrace and the reinforced concrete buildings of the new Pejepscot Paper Mills for the Cabot Mfg. Co., of Brunswick, Maine.

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industry will only be abandoned when the change to a new raw material becomes absolutely necessary. No doubt in the near future proper machinery will have been developed which will enable small mills to be constructed in desirable localities, making it possible to produce commercial fibre pulp, and, slowly, to establish the industry on a profitable basis. At this time is is enough to record the fact that a very satisfactory quality of book paper has been produced from corn stalks and that experimentation leaves no doubt as to the promising nature of the material, giving color to the hope that commercial possibilities will be realized, and especially if the byproduct—in the nature of a food extract—should prove valuable. It may be of passing interest to state that in experiments with this new food extract a sufficient quantity has been produced to conduct a month's feeding of two animals, in co-operation with the Bureau of Animal Industry. The substance has been fully analyzed by the Bureau of Chemistry, but the food or flesh producing value of the extract has yet to be determined. It is shown that 200 to 300 pounds of the food extract can be secured from a ton of stalks.

As the writer has stated in a former article, almost any fibre plant will produce paper, the commercial availability of a particular species being determined first, by the amount of pure cellulose it will yield under treatment, and secondly, its primary cheapness as a raw material. A factor of course must be the cheapness of the process employed in converting the fibre into pulp. No doubt many failures in the past, out of the hundreds of plants that have been the subject of experiment in our own and other countries, have been largely due to the processes employed; and doubtless some of the plants that have been considered unavailable, if treated by the new and improved processes of to-day would show good results.

The Case of American Grown Esparto.

In the range of cultivatable paper plants there are many species showing large percentage of cellulose, and which would yield readily to chemical treatment, but which cannot be produced in large quantities at a cost that would make their commercial use practical. Take for instance esparto, one of the plants under experiment—from raw material produced in California, although the government is attempting cultivation on the semi-arid lands of the West. All paper makers know the value of esparto grass, so long used as a high grade paper material. As far back as 1868 efforts were made to introduce the plant in the Southern States, but with small results. The transplanted plants are said to require 6 to 8 years to come to maturity, while plants grown from seed yield no return under twelve years. But the main obstacle is the difficulty of cheaply harvesting the crop when grown, as pulling the blades by hand is a back-breaking operation, similar to flax pulling, and it is known that even skilled foreign flax laborers will not pull flax in America. It may be noted that the Algerian coast grass is preferred by paper makers, the longer, tougher growth from the interior being used only for making sieves, baskets, etc. All things considered it does not appear that American grown esparto will cut much of a figure in the paper supply of the future.

In the government experiments paper has not only been made in a variety of finishes from broom-corn and maize stalks, but from rice straw and several other materials, both pure and in combination with other fibres, including soda fibre from poplar and sulphite from spruce, and also cotton hull fibre. Small quantities—or "engines" as they are commonly called—of paper have been made from about eight varieties of Indian corn and four of broom-corn to make possible a comparison of the different varieties, both as to yield and to paper-making qualities. Cotton hull fibre, the shortest lint that remains adhering to the seed hulls, and a byproduct of the cottonseed oil industry, used in combination with corn, broom-corn and rice straw papers, has been found to facilitate greatly the draining of the pulp and also to add to the softness of the paper. The rice straw used in the experiments was supplied by the Arkansas Rice Growers' Association. All papers produced in the work of the Department are tested at the United States Bureau of Standards.

Wealth From Cotton Stalks Has Not Materialized.

The fabulous wealth which the public has been told would be derived from the use of refuse cotton stalks (left in the field after the picking season) as set forth in certain magazine and press articles, does not seem to have materialized. Without entering into the merits or demerits of cotton stalks as a paper material—and the Department has nothing to say at present upon the subject—a large obstacle would be the expense of harvesting the crop, which consists of branching bushes growing many feet apart over the field. To get such loose material into compact form to reduce—or even to transport to the mill—would make it anything but a cheap raw product.

I cannot learn that any of the wild grasses have as yet been the subject of experiment by the government, though the Mexican "rice root" plant, so called (a species of grass of rank growth, having wiry, crinkled roots used commercially in brush making), is considered a promising subject for investigation. In securing the fibrous roots the grass becomes a waste product, which may be found worth utilizing. Should the grass be found valuable for paper making, the species might be cultivated in the United States, for brush fibre as well as paper, particularly as the plant is said to thrive in arid regions.

Canebrake and Bamboo Fibre.

The canebrake lands of the south will afford a considerable supply of material for paper making if contemplated experiments with the plant prove its adaptability. Coarse paper has been made in the past from canebrake fibre, although by a very crude process; and as its near relative, bamboo, yields in Oriental lands a fine paper, it would seem that canebrake, now a wasted growth, might show commercial possibilities. Bamboo is being cultivated in several localities in this country, particularly in Brookville, Florida, but I do not think that home grown bamboo will ever be used in the United States for paper on a commercial scale.

A word regarding the paper mulberry, and the Mitsumata (an allied species) so highly prized in the Japanese paper industry. Only the barks of these trees are used in Oriental lands, and should we be able to produce the trees in quantity in the United States by cultivation, it is extremely doubtful if much reliance could be placed upon such sources of supply by the American paper makers for economic reasons.

How Paper Making Is to Be Advanced.

The attitude that has been taken by the Bureau of Chemistry in relation to the work of its leather and paper laboratory has been that the advance in paper making must come along the lines of cheapening production, utilizing byproducts, or in using more largely raw materials which are now quite generally employed. Dr. Wiley informs me that among other things the Bureau is looking very carefully, with great promise of success, into the utilization of the waste long leaf yellow pine of the South. The utilization of yellow pine would present no difficulties to the paper maker, and encouragement it being given, therefore, to the combination of the manufacture of paper, wood, turpentine, resin, and other wood oils from *the waste* of lumber operations. In this way a great percentage of the waste wood of lumbering operations would be utilized, and the danger of loss by fire greatly minimized. Furthermore, this would start a number of paper mills.

In conclusion, while the waste products of the agricultural and other industries will be ample to supply all the requirements of the paper makers, it may yet be found desirable, also, to cultivate certain plants which can be produced cheaply, and which might yield material adaptable to special uses. The government investigations, therefore, will cover a wide range of experiment, and will include the consideration of numbers of species of plants not enumerated in the foregoing, in order that no commercial possibility, in any part of the country, may be overlooked.

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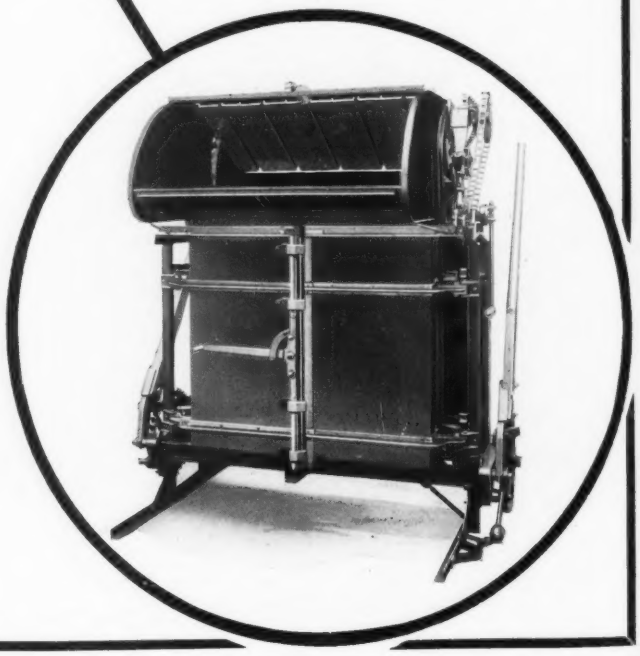

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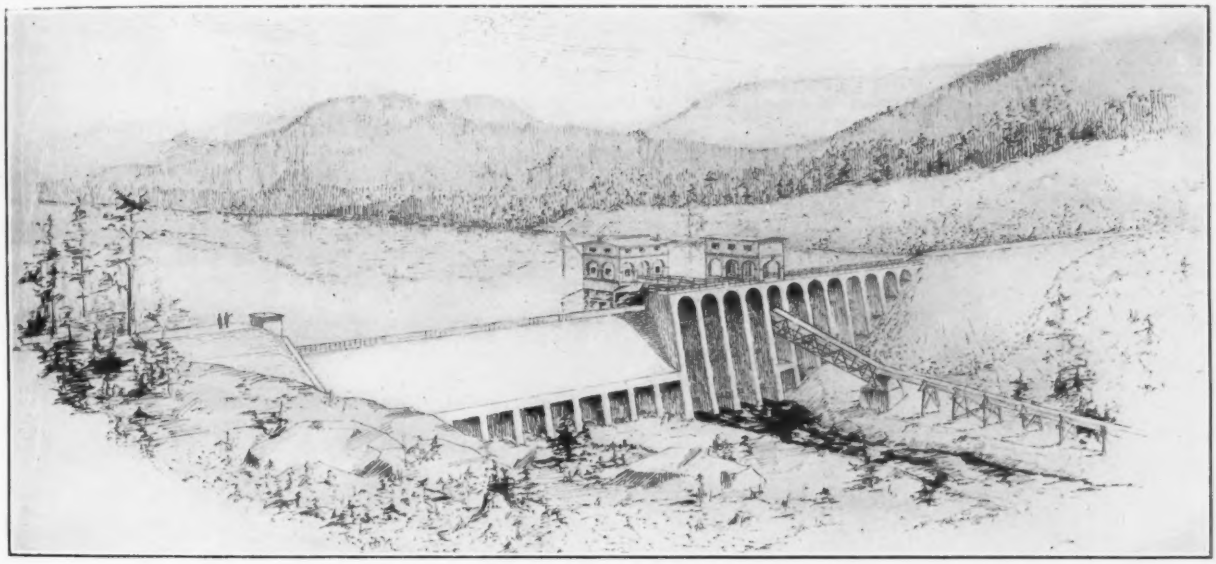
A MAMMOTH STORAGE DAM

The One Now Under Construction at the Headquarters of the Androscoggin River, in Maine, Will Hold Back Eight Billion Gallons of Water—Details of the Big Undertaking

By A. A. Tanyane.

(Written for the Convention Number of The Paper Trade Journal.)

What might be properly considered the greatest engineering feat ever undertaken in New England if not in this country, at least one in which the engineers have had to overcome innumerable difficulties, is the work which is at present being carried on in the State of Maine and is nearing completion. This refers to the building of the Aziscohos dam on the Magalloway river which is the first step taken in this section to conserve the water supply and forestall the needs of the dry season. The outcome of this project will be eagerly watched by the manufacturing interests of this country especially those in the paper industry who are only too familiar with the handicaps which the low water supply of the recent past seasons has placed upon them.



The Aziscohos Dam as It Will Look When Completed—Is Being Built at the Headwaters of the Androscoggin.

Will Have Storage Capacity of Eight Billion Cubic Feet.

Located at the headwaters of the Androscoggin river in the Rangeley Lake system, the Aziscohos dam will have a storage capacity of eight billion cubic feet of water while the present capacity of the Rangeley System is seventeen billion cubic feet and the stored water of the new lake formed by the dam will be enough to operate the mills in the city of Lewiston for three months.

When it was realized that the growth of manufacturing on the Androscoggin river and the development of the available power had made the present storage system inadequate for the needs of the dry seasons, the ways and means of caring for the future were thoroughly discussed by the leading manufacturing interests resulting in the forming of the Androscoggin Reservoir Company, composed of the Berlin Mills Company, the International Paper Company, the Rumford Falls Power Company and the Union Water Power Company. It was not until February 15, 1910, that a decision was made to build a dam and its type decided upon. As it was imperative that all possible work should be performed during the ensuing summer, there was not therefore sufficient time to get out plans from which contractors could bid intelligently and the company instructed the engineering firm of Sawyer & Moulton of Portland and Lewiston, Me., to start the work on the force account basis.

Rush Work Before Spring Freshets.

Realizing that it would be necessary to commence work before the spring freshets set in and the warm days of April make sledding in that country impossible, work was started immediately and for the hauling of 44,000 bags of cement together with a cableway 1,200 feet long, vast quantities of steel, stone crushers, machinery and supplies of various kinds to the amount of 250 tons, required perfecting of one of the most efficient transportation systems ever evolved. There remained only six weeks during which teaming would be possible and to haul to the site of the dam, 40 miles from the nearest railroad station at Colebrook, N. H., the supplies and plant necessary for so gigantic an undertaking, was a task of herculean proportions. As it required at least four days for the teams to make the trip from the site of the dam to the freight station and return, and as there were not a sufficient number of farm dwellings located on the roads to be traversed, it became necessary to erect houses and stables at convenient points along the line of travel, so that the men and horses could be properly cared for during their journeys. So well laid out were the plans for this that the teams traveled on schedule time, and up to this writing it is stated that the instances have been rare when they failed to keep up to their schedule. It became necessary to build of boards and tar a village to provide for at least 400 men, and one of the most interesting buildings is the large dining hall, where 350 men can be accommodated at the same time.

The organization scheme was worked up in detail before construction was started, so that there has been no man employed who did not know just what his duties were, and to whom he must report. This has been a great help and has eliminated much of the friction often seen in work of this nature.

During the winter of 1909-1910, lumber operations had been carried on over the whole valley, in order that all lumber of value might be saved before the freshets of the spring of 1910 held back by the new dam converted the valley into a lake. A sawmill was put into operation and turned the green trees into boards to be used in making forms for the concrete of the dam. A crew of men labored in the deep snows cutting cord wood, and it has been figured that the wood required to generate steam during the past

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year would make a pile of the ordinary height of cord wood and seven miles long. Owing to the great expense of getting material into the site it was decided to build a cellular concrete type of

CABLEWAY TOWER AND SLUICING GIANT IN OPERATION.

dam, and during the past summer 40 teams have been at work and ten loads of material have been delivered at the dam daily.

DIMENSIONS OF THE BIG DAM.

The construction of the dam consists of piers 4 feet thick and 20 feet on centers, with a face slab resting against their upstream sides all to be reinforced. This is not the first dam of this type ever designed, but it is thought to be the first one ever constructed, and its general dimensions are as follows: Total length, including core wall 881 feet; height from ledge to top of dam 78 feet; depth of water held by dam 60 feet.

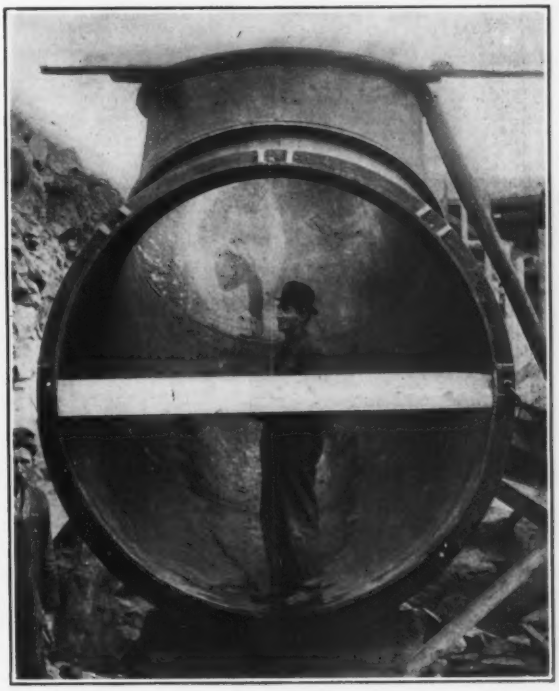
One of the first difficulties to be met with by the engineers was

SHOWING UP-STREAM SLOPE OF SPILLWAY.

the lack of a good sand bank within many miles of the dam, and it was necessary to make sand from the glacial debris on the ground. It was found that one-half of this material was sand suitable for the concrete, but the problem was to find a way to separate the good from the bad, and this was accomplished by designing a plant which screened the material, mixed it with water and then separated the different sized grains in a tank of flowing water. This was done by taking advantage of the fact that heavy particles settled more quickly than lighter ones. The sand grains

VIEW SHOWING IN THE FOREGROUND THE EXCAVATION FOR PIERS FOR THE NEW DAM.

which could be used were carried away to a storage bin, while the dirt and fine particles were carried away by the current of water. This apparatus worked so successfully that enough sand was made during the summer to provide for all the concrete that has



ONE OF THE TWO OUTLET TUBES TO BE EMBEDDED IN DAM.

been made up to this time. Only a few hundred feet from the dam a quarry was opened to obtain crushed rock for the concrete and by means of a gravity tramway the broken stone was conveyed to the crusher, the crushed rock being delivered to the elevators which hoisted it to the stop of the store bins under which were

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located the concrete mixers, and as soon as the concrete was mixed, it was picked up by the cableway and carried in a narrow gage road that runs over the top of the dam and rushed to its final resting place in the forms.

Water Used in Excavating.

It was necessary that a very large amount of earth be handled as cheaply as possible and for this reason it was decided to install a pumping plant of large capacity. Two "Terry" steam turbines were installed, each directly connected to an Alberger centrifugal pump. These turbines were supplied by a battery of six boilers, and the pump supplied 2,000 gallons of water per minute under a pressure at the end of the line of 100 pounds per square inch. The great force of this water was employed to excavate trenches and carry the mixture of water and dirt through flumes and to deposit the earth at any desired point. The preparatory work of clearing the site, building roads, cutting timber for fuel and saw logs, and the erection of temporary buildings was commenced on September 1, 1909.

Test pits had shown the depth below the surface of the ground at which ledge would be found, but they had not shown the condition of the ledge. When finally uncovered the ledge was found to be seamed and cracked, and it was necessary to remove all ledge down to a point where it was absolutely sound; this meant the removal of a layer of ledge over a large part of the dam foundation from 8 feet to 16 feet in thickness. The removal of such a large amount of ledge held back the progress of the work about six weeks. It also necessitated the working of large crews of men in restricted areas and otherwise complicated the details of construction. One of the most important questions in the construction of a dam of this height is the design of forms. The fact that the dam is composed of a large number of divisions practically alike suggested the use of forms made in sections so they could be taken down and used over. A system of bracing was originated doing away with the ordinary shoring that runs to the ground, comprising bolt sockets imbedded in the concrete, and pockets left in the faces of the piers to receive the bracing of the forms above. It is not believed that this way of building forms is any cheaper than the ordinary method, but it is strongly advocated on account of the rapidity with which they can be assembled without employing an army of carpenters to keep the form work ahead of the concrete.

Just above the site selected for the new dam stands the old Aziscohos logging dam. A flume was constructed to carry the flow of the river from the old dam over the foundations of the new dam. When the outlet provided in the new dam was finished the water was turned through it and the old flume thrown away.

A Sluiceway in the Dam.

The entire country for many miles above the dam is heavily wooded and it is probable that for many years to come there will be 20,000,000 feet of logs passed through the dam annually. This introduced one of the hardest problems to be solved in the design of the dam. A study of conditions showed that it might be necessary to sluice logs through the dam with the lake level varying 25 feet. A slot was cut in the dam and a steel truss carrying a V-shaped flume was suspended at its upper end in this slot. The lower end of this truss was carried on trucks on a concrete pier below the dam. The logs are guided from the lake into the log-way slot in the dam where the rush of water running from the inclined flume carries them along. This flume is to be continued down the river two miles where the logs will be discharged into the river. This steel truss is suspended at its upper end from a frame so that it can be raised or lowered by a hand power crane to meet the level of the water in the lake.

The logs will shoot down this flume and steel truss at the rate of 30 miles an hour. The crane mentioned above is a very ingenious piece of machinery. The disaster and loss of life that would follow, should a man make a mistake in attempting to raise or lower this truss, weighing many tons, can be imagined. For this reason, the machinery is so designed that it is fool proof.

(Continued on page 159.)

Photograph of the Maine Water Storage Commission on a Visit to the Aziscohos Dam.

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The First Essential of Success Is an Exact Knowledge of What Your Goods Cost to Manufacture—He Who Has These Facts Works in the Daylight

By James V. Shields, Industrial Accountant.

(Written for the Convention Number of The Paper Trade Journal.)

Other things being equal, the most successful manufacturing enterprise is that one the owner or manager of which is best informed as to every detail of the working of his mill. Through his continued study of these details and the concentration of his intelligence and energy upon the improvement of existing methods and conditions, he is able to raise the efficiency and money-earning power of his business to a height that causes him to be envied by his competitors, who, though probably men possessed of personal intelligence, and realizing that the ultimate object of their industries is to make money, and wishing the various operations in their industries so conducted that each and all shall result in a profit, are not a little like those living creatures which, because devoid of intellect or reason have never introduced modifications or improvements into their methods of work and have remained all these ages in the condition in which we find them. For instance the ants and bees in the time of Moses worked as perfectly as their descendants of to-day.

Industrial Management a Science.

The details of industrial management growing ever more complex, industrial management has become a science, the primary object of which is to simultaneously reduce labor and expense and greatly increase production by more efficient methods of work. Scientific industrial management has already worked a wonderful change, has infused new life into many industries, but the change for industries in general has only been begun.

Those unprogressive owners or managers to whom reference has been made above, are wont to excuse their neglect of scientific management, by offering the information that theirs are peculiar businesses. While the latter is undoubtedly true, the unfortunate fact is that the businesses of their progressive competitors are likewise peculiar businesses, of which fact the unprogressives may not become aware until a day of reckoning for them arrives.

The progressive, the scientific industrial manager, even though he were to take charge of a run-down or declining business, could, because of the mastery which his persistent study of essential data would speedily give him, and because of the general impulse to the spirit of efficiency among employes which such a study would quickly produce, bring about a revolution in methods and organization which would place the once run-down or declining business upon such a footing of permanency and solidarity as to practically guarantee its continued success.

There is required no stretch of the imagination to trace on the one hand the logical connection between the mill owner fortified with a comprehensive knowledge of essential facts and the high efficiency of the mill of which he is the owner, and, on the other hand, the logical connection between the mill owner without a comprehensive knowledge of essential facts, who is groping about in the dark, basing his conclusions upon the faith or untrustworthy information and the consequently low efficiency and money earning power, if any, of the mill of which he is the owner.

How to Attain Comprehensive Knowledge.

The question naturally suggests itself, how is the mill owner who has not, yet would have a comprehensive knowledge of the essential facts of his business to attain to such knowledge. Manifestly he can rely upon his observation to secure it for him, but howsoever persistently he may observe, he being but one individual, can see but a small part of what is going on. However, let him not look upon the task as so great as to require an imagination equal to that of a professional Socialist to see it successful and to conceive of its satisfactory working, for there is a very real means by which it would no longer be nesessary for the owner or manager to make round after round of his mill in the hope of seeing and hearing all that is going on therein—a means by which he could have at his disposal more essential facts relative to his business than he can ever get by making a personal search for them, a means by which it would be possible for him, even though he were to remain in his office, to immediately place his finger upon bad or unbalanced conditions and proceed to eliminate or correct them. So situated his position would be like that of the commander-in-chief of an army, who from his tent directs the movements of his subordinates. Relieved of burdensome details he would be free to devote the necessary time to the most important interests of his business.

A primary essential of scientific industrial management, and the means referred to in the above paragraph, is a practical, comprehensive system of industrial accounting—a cost system that is thoroughly co-ordinated with the financial accounts of the business. Any system of cost-finding that is not so co-ordinated is wholly unreliable and worse than none at all, for among other defects, it cannot be analyzed to show at any time the exact condition of the whole business so that bad and unprofitable conditions which may arise may become apparent and be eliminated before they end in financial loss.

Owners and managers in the paper industry should be determined to make use of a system of industrial and cost accounting as would make them masters of every detail of their businesses. In the face of existing and coming industrial conditions, they must eschew estimates and guesses, cease to weave "costs" out of imaginations, and be determined to get at the facts, for it is only from concrete truths that valid conclusions and feasible plans for economies and improvements can be drawn.

While is hardly reasonable to suppose that any one will knowingly produce at a loss, there are legions of manufacturers who are satisfied with a small profit from their businesses as a whole, and who never suspect that the large profits they are actually making on one or two profitable lines, are being eaten up by the heavy losses realized on other lines that are perfectly unprofitable. Again there are other manufacturers who, in their hearts, know that this condition obtains in their businesses and yet have not the moral courage to go after and get possession of the facts.

Advantages of Efficient Cost-Finding System.

What, it may be asked, are the advantages of a practical, efficient system of cost-finding? I answer that the most patent advantages are the following:

The manufacturer with an efficient cost-system is working in clear daylight, while the one without such a cost-system, or with a defective one, is groping in the dark and is as far away from the truth about what it costs him to produce as midnight darkness is from noonday light.

A practical, efficient cost system makes it possible to ascertain the actual profit or loss on each line produced and on each transaction (thus showing (which) lines and orders to avoid as unprofitable.) and secures priceless data for use when bidding for new business. Moreover, such a cost-system prevent wastes and leakages, raises efficiency, reduces costs, prevents loss of time, indicates existing weak conditions and what is all important, determines the correct financial condition and earnings every month without the taking of an inventory. In connection with this last named advantage I would point to the fact that those industries which are without a cost-system such as I have described above, and the books of which are closed annually or semi-annually directly after the industries have been inventoried, are under the necessity of pricing their inventories of work in progress and of finished product at mere estimates which are either above or below actual costs and which consequently result in either false profit or a false loss being shown.

The tendency of a goodly number of owners and managers of

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industries is to regard the obtaining of thoroughly complete, accurate and reliable costs of production as an enigma or transcendental problem that is beyond the possibility of solution. Others, with an equally wrong conception of the possibility of solving the problem of obtaining such costs, consider the whole subject as wrapt in impenetrable mystery and as of the altogether unknowable, beyond which can in no way be formulated or expressed. I can almost hear them say: "Clear knowledge of these truths is not in the possession of man." However, there is a vast difference between such imaginings and the reality of facts, the truth being that there exists beyond rational possibility of doubt, a science of finding correct costs of production which is no less an exact science than is mathematics.

Experience teaches that men's minds often vacillate in the endeavor to discover truths which, in themselves, do not exceed the limit of man's natural comprehension. They do likewise in their endeavor to discover the truth as to costs of production.

Cost Finding is a Science.

Cost-finding is a science and the application of the general principles of any science calls for the consideration of many complex factors and gives rise to problems which trained and expert minds only can solve. Therefore only those who unite a thorough knowldege of the science of finding correct costs of production with practice in its application, may be trusted to solve promptly and safely the problems of cost-finding. Hence those owners of industries who contemplate the solution of their cost-finding problems should be careful to secure none but thoroughly expert and able assistance and should make certain that their industries are not being practiced upon by incompetent novices or charlatans, there being many such who profess to do satisfactory cost-finding work. I believe it unmistakably manifest that the man—call him auditor if you will—whose knowledge of manufacturing processes and principles does not extend beyond the checking and addition of figures in the accounts of manufacturing concerns, fails to measure up to the high standard of practical ability necessary for the finding of actual, trustworthy costs of production.

It is no exaggeration of the facts to say that the more the manager of any industry knows about its costs of production, the more intelligently and profitably will the industry be conducted.

A MAMMOTH STORAGE DAM.

(Continued from page 155.)

An interlocking system of levers makes it impossible to pull the wrong one, or release the truss until it is securely fixed in position. Before deciding on the design of the log-way, a working model was built and expert log drivers estimated that two million feet of logs could be put through in a ten hour day.

Present Status of the Work.

At the present time, the concrete foundation is in place along the entire length of the dam, and the buttresses and face wall are at varying heights. The work will be pushed energetically during the entire winter so that when the melting snows in the spring of 1911 fill the valley of the Magalloway river a large amount of water will be held. Proper provision is made during the cold weather for warming the materials from which concrete is made so that it sets before it freezes. Steam pipes and canvas covers are provided wherever necessary. A considerable amount of concrete has been placed since the freezing weather first appeared in the Magalloway regions, but as yet no concrete has been frozen.

The progress of the work is all that could be desired and since the beginning of concreting over 100 yards have been placed daily.

The value of Japanese wood pulp imports from the United States had been: 1905, $32,768; 1908, $43,335; 1909, $25,433. Sweden's direct trade in pulp with Japan was in 1909, $194,496.

The Thilmany Keeping Up to Date.

[FROM OUR REGULAR CORRESPONDENT.]

Appleton, Wis., February 13, 1911.—In keeping with its progressive and up to date policy the year 1910 brought about a great many changes in the plant of the Thilmany Pulp and Paper Company, of Kaukauna. These alterations and additions have been made to put the entire plant in the best possible physical condition. Further than this certain extravagances in the consumption of fuel and power, unavoidable under the old system, have been eliminated by the application of the most modern methods.

No. 2 machine, which was formerly devoted to the manufacture of poster and catalogue papers, was entirely dismantled and rebuilt by the Beloit Iron Works. Several additional dryers were added, the wire lengthened and a Millspaugh revolving suction roll installed, making the second in use by this company. While the

Mill of the L. H. Gardner Company, Mumford, N. Y.

machine was torn down the entire floor was relaid in steel and concrete, including No. 2 and No. 4 beater rooms.

The old wooden flume was ripped out and seven water wheels of the vertical type were discarded. A new reinforced concrete flume was built, equipped with two Samson horizontal turbines of 300 horse power each, with the Dodge rope transmission complete. In this manner a much more effective power is secured with the use of less water, and a large amount of shafting and belting is disposed of.

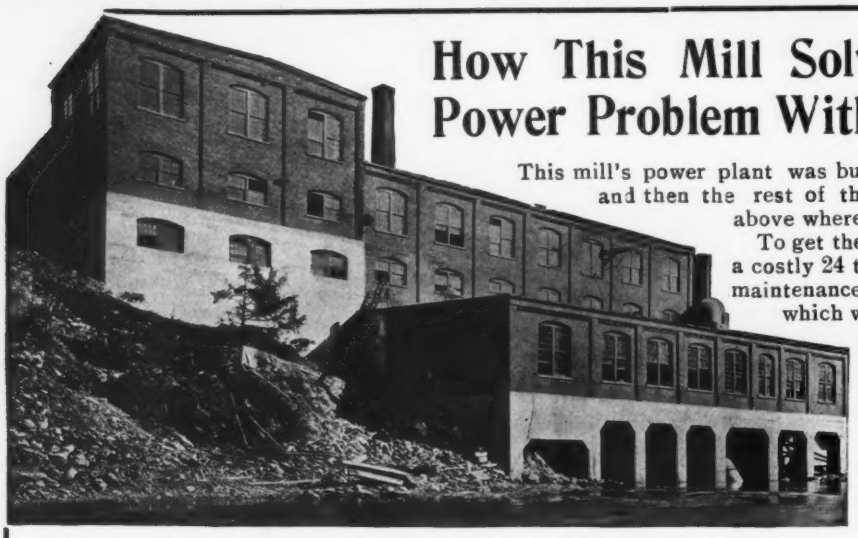
In the boiler house the work of installing a Jeffrey automatic coal conveyor is now in progress. By this means coal will be carried directly from cars to hoppers at the boilers, doing away with the necessity of wheeling and shoveling. A coal crusher has also been installed, as the five boilers in use are equipped with Murphy automatic stokers, which are designed primarily for screenings, and cannot handle lump coal to advantage.

To Make Glassine and Greaseproof.

Experiments are now under way in the manufacture of glassine and greaseproof papers on No. 2 machine, but as yet none of this paper has been put on the market. This paper very closely resembles waxed paper, and is put to a multitude of uses, such as the wrapping of candies and cigars, the lining of boxes, as well as outside wrappings. At the present time but two or three mills in this country are manufacturing these grades, a large percentage of the tonnage used coming from Europe. To complete the equipment of No. 2 machine for these particular papers a stack of supercalenders has been added, together with dampening and embossing machinery.

Additional power equipment has also been ordered in the shape of one 300 horse power De Laval exhaust steam turbine and a 50 kw. turbo-generator which will light the mill. During the present year No. 5 tissue machine will be shut down for complete repairs and the mill's total beating capacity will be somewhat increased.

Fox River.



How This Mill Solved a Difficult Power Problem With Electric Drive

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BY-PRODUCTS RECOVERY

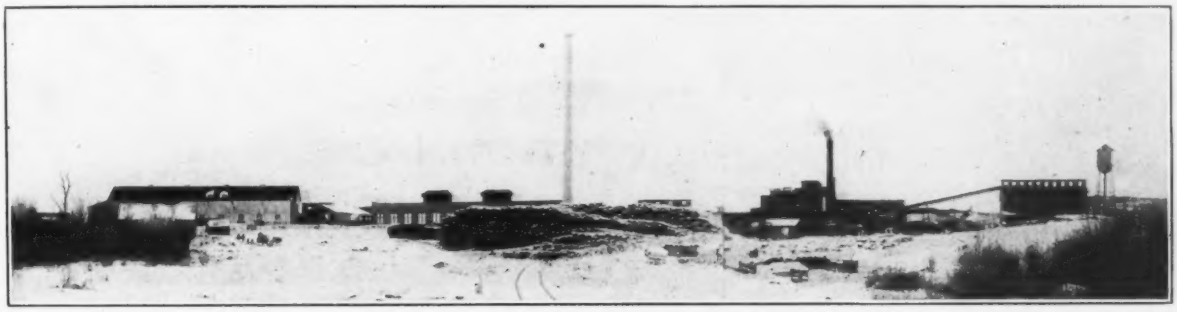
Suggestions as to Means of Saving and Utilizing Waste Materials

Rossing and Spent Liquors Are Taken as Examples of Wastes That Can Be Recovered—The Possible Recovery of Sulphur, Lime, Etc.—Value of Black Liquor from Poplar Wood

By Martin L. Griffin, of the Emerson Laboratory, Springfield, Mass.

(Written for the Convention Number of The Paper Trade Journal.)

Until within the last thirty years the paper industry has rested almost wholly upon the use and conversion of a waste product of civilization. Cotton having served its most useful purpose in clothing mankind, its residues of cast off garments became one of the raw materials from which paper is made. We cannot expect a series of industries to thrive on the successive byproducts of each, demonstrating the law of conservation of energy. There are, as a matter of fact, no byproducts from the manufacture of paper from rags. But when we come to the use of wood, a highly complex product of plant growth, containing only from 40 to 60 per cent. of cellulose and the balance, nearly one-half its solid contents, a byproduct, we have an industrial problem of great importance and magnitude to deal with. Further than this, all of the raw materials entering into the liquors for the reduction of wood and a few other raw materials used for paper stock, notably esparto grass, become waste or byproducts, and these also are large and important quantities.



General View of the Plant of the Katahdin Pulp and Paper Company, Lincoln, Me.

Different kinds of woods differ essentially in their physical and chemical constitution and composition, and for the purposes of paper stock require discriminating treatment. This is so to such an extent that only the easiest woods to reduce are used. Such woods uniformly contain a larger proportion of cellulose, and a correspondingly smaller proportion of extraneous matter, which the chemical treatment must dissolve out, and therefore are doubly more economical to reduce.

On the other hand it is true, as a general statement, that what different kinds of wood and plant growth lack in wood fibre, they make up, we may say in equivalent value, if not in the stalk, in fruit. Poplar contains from 55 to 65 per cent. cellulose, spruce 55 to 60 per cent., hemlock and jack pine about 50 per cent., while chestnut log and long leafed pine contain much less. The study of plant growth is quite fascinating technically as botanically.

The roots, bark and foliage of all plants contain the minimum of cellulose or crude fibre as compared with the stalk and the maximum of soluble extractive matter. Hemlock bark contains 15 to 16 per cent. of tannin, the wood about 1 per cent., while chestnut bark runs about 12 per cent. and 7 to 8 per cent. in the wood and licorice root about 50 per cent. of extract and a pithy fibre. This is naturally so, since it is in the roots, bark, and foliage that growth takes place, while the stalk or fruit is the finished product.

Nature has chosen to differentiate her products of woody stalk, and we have the pines secreting large amounts of pitch and resins, while hemlock, oak and chestnut contain tannin in varying amounts. It is worth while to note in passing, that the woods containing these secretions are most durable when exposed to the action of time and the elements and that this porvision was made for a wise purpose. As an inference from this deduction, we are directed to the best means and methods of wood preservation. Pitch and tannin are nature's fungicides to ward off disease and decay, and there is good reason for the claim that the pine grove and forest are health giving.

Avoidable Wastes in Pulp Making.

It has been the practice to treat the natural wood for pulp, and all else becomes a waste product. From a commercial standpoint we may just as truly regard the intercellular and ligneous matter in wood as a by product, as after the reduction process, where it appears in the waste liquors.

A great deal of labor and money has been spent on the matter of waste liquors from the pulp industry, particularly in the manufacture of sulphite. Is is not quite possible that much of this waste might be avoided and the reduction of the wood accomplished more economically by some preliminary treatment of the wood, whereby, if useful products cannot be extracted from the wood, at least the matter handled in such a way as to reduce the cost of conversion and lessen stream pollution?

We have a few cases in point—chestnut wood is extracted for tannin by the leather industry, and the extracted wood is a by-product. Long leaf pine is now treated to some extent for rosin and turpentine and the wood is not yet used for pulp but probably will be soon. Again, some wood is boiled under pressure with water and steam for the production of stock for a tough board, and the acid water is rejected. I mention this latter to show the possibilities of a simple treatment to produce an effect or differentiate.

Generally speaking, where a useful product or substance exists incidentally in a raw stock, it is much more available in it, than at any subsequent stage of a process for the main product, because it becomes more involved, obscured and difficult to regain. A very important case in point is the recovery of wool grease and potash from wool. It has long been the trade custom to scour wool and reject the scourings to the great injury of adjacent streams, or else to partially recover the grease by treatment with acid and skimming. This process is, to say the least, not very satisfactory for many reasons. It has held on by prejudice altogether too long. Wool lends itself to an extraction process perfectly, and there is no reason why, with equal intelligence, clean wool of better quality should not be obtained by an extraction process than by scouring. The subsequent washing would be simple and inexpensive and the

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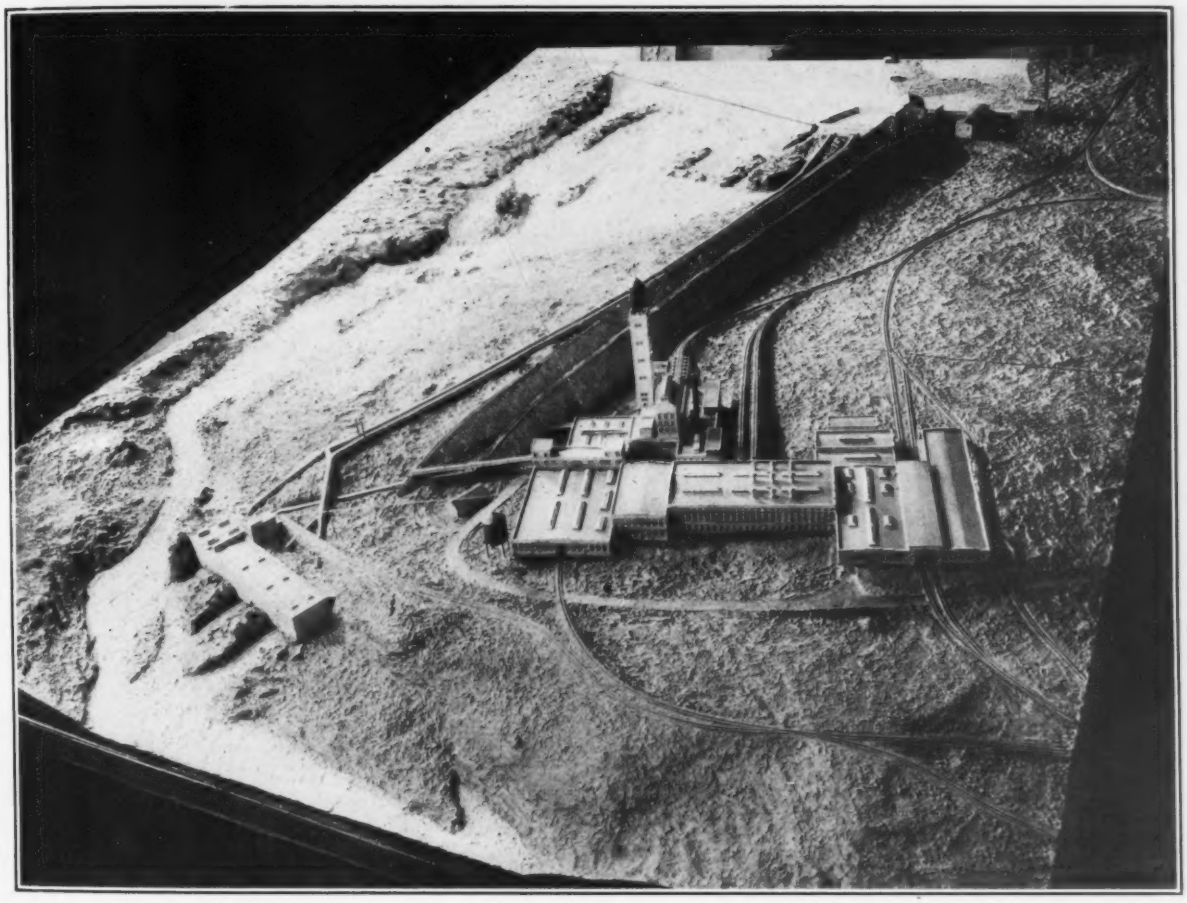
grades would be of better quality. I wish to make this point, that in any process using a complex raw material, in which there exist possible valuable byproducts, a selective treatment has a decided advantage over a blanket treatment, both in processing and in recovery of useful byproducts.

Having now outlined the situation and general mode of procedure, we will take up the byproducts of the paper industry as they now exist.

First, there are the rossings—a byproduct of the wood cleaning. They consist of bark and wood and have in the past been re-



Clay Model Giving a Birdseye View of the Mill of the Anglo-Newfoundland Development Company, Grand Falls, Newfoundland. The Paper Making Portion of This Plant Is to Be Doubled.

garded as waste to be burned up or otherwise rejected. Now as a matter of fact, this waste can be turned to a more valuable account, both by chemical treatment to secure valuable products, and also by mechanical, to produce pulp board and lumber. I am very well aware of the fact that seldom can a successful business be built upon a waste product of some other industry, but when the treatment of such waste is carried on conjointly with its production, it is frequently very profitable.

The Waste Liquors—The Soda Process.

It has long been the custom to recover the soda from this liquor by evaporation and burning out of the organic matter. Few attempts have been made to get anything more out of it, though several years ago a notable effort was made to produce powdered carbon black from the black ash residues, to be used in paints and for enameling cloth and leather. This was fairly successful but commercially short lived.

The black liquor from poplar wood contains about 10 per cent. absolute acetic on the dry solids basis, combined of course as sodium acetate. It contains also about 7 per cent. of extract by ether and 28 per cent. by absolute alcohol, making a total resinous extract of about 35 per cent.

Acetic acid and sodium acetate are valuable commercial chemicals, while resins are the basis of engine size in the manufacture of paper and are largely used in the soap and varnish industries. Here then, is an enormous waste which I believe could be turned to profitable account if worked out, and I offer these problems to staffs of our government experiment laboratories and students of our technical colleges.

In the recovery process of the soda there results a large quantity of calcium carbonate, roughly speaking, an amount equal to that of the soda recovered. Many attempts have been made to utilize this waste, and it is possible to do so. It can be used in the manufacture of Portland cement; as the base for acid making by the sulphite process; or it can be reburned to lime and used over again. It has been recovered in each of these ways, but results have been doubtful, due to differing circumstances. I consider, however, that this waste can be disposed of in many localities at a slight profit when occasion demands it.

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The last and greatest waste from which byproducts are possible is the spent liquor from the sulphite process. This contains not only the organic matter from the wood in enormous quantities, but practically all the chemicals in some form used in the reduction. Ever since the process was applied to the pulping of wood, numerous attempts have been made to recover useful products with but very meagre results.

As I have indicated above, and pointed out elsewhere, a much more rational procedure would be to treat the wood by selective processing, successively, with suitable solvents. In this way gums, resins, tannins, etc., can easily be gotten, and this followed by an acid treatment to obtain fermentable sugars, which in turn can be converted into alcohol.

Finally we shall secure the maximum pulp product with a minimum chemical treatment. This method of procedure is now attracting considerable notice outside of scientific experimentation. Naturally this would appear where conditions indicating success are most apparent, as resins and turpentine from pine, tannin from chestnut, and alcohol from spruce by the sulphite process.

The Possible Recovery of Sulphur and Lime.

In reference to the possibility of recovering sulphur and lime from the waste liquor, I have no hesitation in predicting that this can and will be accomplished at some future time, unless the use of them shall be reduced to such a point that their quantities would be inconsiderable. The greatest obstacle to such recovery would be the necessity of evaporating the water out of the liquor. The process might be roughly outlined as follows:

First.—Neutralize the liquor.

Second.—Evaporate so as to incinerate.

Third.—Adjust chemical composition so as to eventuallly obtain alkaline sulphides.

Fourth.—Burn out organic matter and obtain alkaline sulphides and carbonates.

Fifth.—Leach out sodium carbonate if present.

Sixth.—Treat earthy sulphides with water to a creamy consistency.

Seventh.—Blow with carbonic gas for hydrogen sulphide.

Eighth.—Burn hydrogen sulphide for sulphur dioxide.

Ninth.—Recharge residual earthy carbonates with the recovered sulphur dioxide to bisulphite.

Tenth.—Filter and purify the acid liquor for boiling wood.

Now I do not pretend that such a scheme is technically or chemically correct in all details, if it were, it would be available at once. It is quite possible that the exclusive use of soda ash as a base in making the acid liquor, would possess some advantage from several standpoints, and if recovered would not add to the cost. I believe such a process can be worked out successfully, but some money would have to be spent to do it. Taking into account the matter of stream pollution, such a process, even though it could not stand on its own legs commercially, might solve this much vexed problem.

During the last few years attempts have been made to use this concentrated waste as a core binder in foundry practice with satisfactory results, I believe, but unfortunately there is a very limited usage of any core-binder. As an adhesive is is useless. The government has made some experiments with it as a road binder and dust preventive with no results worth while. I suggest that it might have some value as an insecticide and fungicide in agriculture. I believe it is worth an intelligent test.

Another use to which this waste liquor could be put to good advantage is as a wood preservative. Decay in wood is due to fungoid growth and any agent which will prevent this will prolong its life. Soft woods which have had their air spaces filled by injecting sulphite liquor are made dense and heavy and may take the place of many hard woods, and by special treatment take a finish.

Will Recover Many Useful Products.

During the last few years we have heard a great outcry about the conservation of our natural resources. Shall we not carry this same spirit into the recovery of many useful byproducts? If it is an economic waste to cut a tree before it is mature, it is wasteful to make an improper use of it, or to fail to recover all there is in it. The time cannot be distant when we shall recover many useful products which have hitherto been concealed under the name "waste."

Albertson Is Michigan's Mill Builder.

[from our regular correspondent.]

Kalamazoo, Mich., February 13, 1911.—Dan J. Albertson, Michigan's leading paper mill architect and civil engineer, has been engaged for sixteen years in that line of work, and during that period probably prepared more plans and specifications and superintended the erection of more paper mills than any man in the Middle Western States. Mr. Albertson's work has been almost exclusively in western Michigan, but he has a fertile field to work in, for during the years of his activity this section has become easily one of the greatest paper making centres in the world.

His first real job at mill construction was when the Bryant Paper Company erected its No. 1 mill here in 1895. Since that date he has had practically full charge of the following big contracts;

Bryant Paper Company—Mill No. 2, Superior Mill, Milham Mill, Imperial Coating Mills and all additions.

King Paper Company—Mills Nos. 1 and 2 and Coating Mill.

Monarch Paper Company—Paper Mill and Coating Mill.

Western Board and Paper Company—Mill.

Riverview Coating Mills—Original plant and two large additions.

Standard Paper Company—Mill No. 2.

MacSimBar Company—Mill.

Michigan Paper Company—Mills Nos. 1 and 2.

Michigan Boxboard Company—Mill.

Lee Paper Company—Mill.

Watervliet Paper Company—Mill.

American Boxboard Company—Mill.

Elkhart Paper Mills—Mill.

Detroit Sulphite Pulp and Fibre Company—Mill.

St. Lawrence Paper Company—Mill.

The above make in all twenty-five important contracts that he has had in sixteen years, while his office and engineering force, himself included, now numbers twelve people.

That Mr. Albertson has made a success of his chosen line of work goes without saying, the best proof being that he is reengaged by concerns that he has already done work for. That proves that his methods meet with favor. Howard P. Hall.

Largest Building for Wrappings Only.

The Seinsheimer Paper Company, of Cincinnati, Ohio, has under construction in that city a new warehouse, which when finished will, the company states, be the largest building of its character devoted exclusively to the handling of wrapping papers. It is constructed of reinforced concrete and is equipped with a sprinkler system, and is absolutely fireproof throughout.

The building is 152 feet fronting on McLean avenue, with a railroad spur to the building, and 175 feet in depth on York street, directly opposite the baseball league grounds. It is three stories in height, giving approximately 80,000 feet of floor space. It has all the modern improvements, viz., offices, bathroom and showers for the entire force and gymnasium. The heating and ventilation is the most modern that can be constructed.

On completion of the building the company intends to have a grand reopening, to which an invitation will be extended to the entire trade.

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PRACTICALLY ALL GRADES

Mill of Russell Falls Paper Company

The new, compact, well located and modernly equipped mill of the Russell Falls Paper Company, located at Russell, Mass., started making its first paper about the middle of December. The location of this mill is most advantageous being on the main line of the Boston & Albany road, about equally distant from the New York and Boston markets.

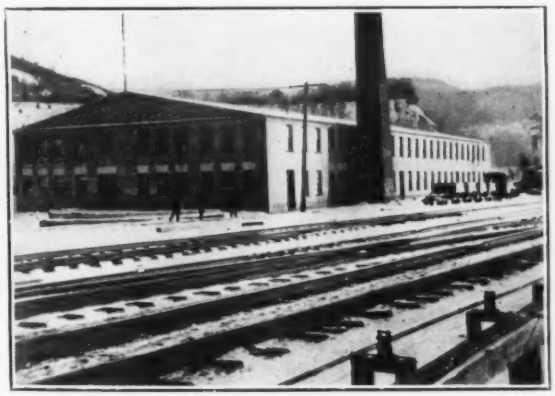
The buildings are of brick 80 x 208 and 40 x 76. Spur tracks run on each side of the mill, making it very convenient to handle the raw and finished products of the company, it being necessary to handle but once the incoming or outgoing freight. The equipment consists of one 82-inch Rice, Barton & Fales Fourdrinier machine capable of producing 8 to 10 tons of high grade book papers and specialties daily.

In the beater room are five 550 Emerson beaters and two wet machines of 1,000 pounds capacity each to which will be added shortly another 1,000 pound beater. In the finishing room there are three Findlay type cutters with Hamlett drives and two stacks of supercalendars, one of 47 inch face and the other 36 inch.

The entire mill is electrically driven, a 250 horsepower motor drives the beater room; a 75 horsepower motor drives the paper machine; a 50 horsepower motor drives the supercalendar stacks; a 25 horsepower motor drives the rag and rotary room; a 10 horsepower motor the wood working shop and a 6 inch volute centrifugal pump for water supply is driven by a 15 horsepower motor.

The power house is equipped with a 375 K.W. 3-phase, 60 cycles, 550-volt General Electric dynamo with direct connected exciter and two water wheels controlled by a Lombard governor. The entire electric power of the plant is developed by the company's own water power and transmitted a short distance to the mill.

The company's water power is capable of producing twice the present development for 8 or 9 months of the year with good storage. The company also owns a second undeveloped water power about a mile above the present dam, which when developed is estimated by its engineers will produce 1,000 horsepower on an average and will have a large storage which will increase the value of the lower power. This power, together with ample land located opposite the mill to which spur tracks can be laid, is very valuable

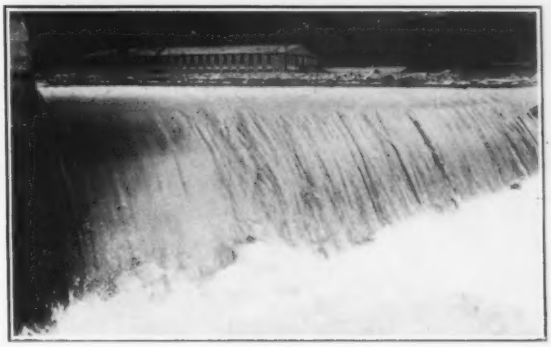


Mill and Railroad Connections of Russell Falls Paper Company, Russell, Mass.

for future growth. Later it is intended to take water for washing purposes from Great Brook which flows into the Westfield river opposite the mill and it is valuable for its purity in the making of clean and bright papers. Like the dam which has 438 feet of spillway with fore-bay walls 12 feet thick at the base, the power house, the main floors of the mill, rotary room, as well as drainers, bleaching tanks, and all foundations for paper machinery, motors, etc., are built entirely of concrete re-inforced.

It is intended for the present to manufacture high grade book papers and specialties and later to add another machine for the purpose of entering the field of fine writing papers.

The officers of the company are A. W. Rogers, president, who is also president of the National Fibre Board Company; T. B. Plimpton, secretary and treasurer, formerly with the Plimpton Printing and Book Publishing interests; H. T. Maynard, vice-president and manager, who has for some eighteen years been connected with the paper industry; Albert L. Scott, one of the directors, is treasurer of the Lockwood, Green & Co., industrial engineers, and the superintendent is Alexander Caldwell, who for many years has been connected with mills devoted exclusively to making high grade book papers.



Dam and Flow—Russell Falls Paper Company, Russell, Mass.

Though the mill started making paper in December, no efforts at selling its products were made until the first of the year and the company states that it has met with a very cordial reception.

Water Filtration for Industrial Purposes.

The following is an abstract of a paper read before the Franklin Institute, of Philadelphia, by Churchill Hungerford, filtration engineer:

The paper dealt with some of the extraordinary forms of pollution which cause trouble in certain special manufacturing processes, but in the main it discussed problems of purification of such waters as the average textile manufacturer is compelled to use. Various degrees and forms of contamination of streams were described, and number of interesting instances were cited showing the manner in which the impurities are so completely taken out of the water that it is made even more satisfactory than the municipal supplies of the towns in which the factories are located. Some interesting data relating to the relative amounts of water required by the different industries were given. "A pound of muslin or similar cotton fabric requires in the bleaching process about 27 gallons of water. A pound of paper requires about 50 gallons of water and a pound of silk not less than 1,000 gallons of water." The matter of the use of chemicals such as alum, lime, sulphate of iron, calcium hypochlorite, sulphate of copper, etc., as an aid to purification process was discussed, and a detailed account given of the manner in which these chemicals are completely removed from the water after they have done their duty. His article closed with a description of a filter plant capable of handling highly polluted waters.

The Handelsmuseum (Vienna) recently stated that, in spite of the considerable import duty, there should still be an important market for printing paper in Argentina, as the paper of local manufacture is of inferior quality, and the better qualities of European origin are generally preferred.

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AN EPOCH IN KALAMAZOO PAPER MAKING

The Great Milham Division of the Bryant Paper Company, Now Nearing Completion, Will Make the Plant of This Concern a Ten-Machine Mill—A Product of Brains and Enterprise

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., February 13, 1911.—Structural work on the new Milham mill of the Bryant Paper Company is completed and a big force of men are engaged in installing the machinery, with every prospect that the immense plant will be in operation in April or May of this year.

The building of the Great Milham division of this concern marks an epoch in the history of paper making in Kalamazoo. It will not only be the largest single mill in Michigan and one of the largest in the world, but it will mean that the Bryant Paper Company will then have ten machines in operation, capable of making from 1,100 to 1,200 tons of paper a week, a greater product than any book mill in the world. The Milham division is designed for three machines and will cost (building and equipment), over $1,000,000. It is the most modern of any similar institution in Michigan and a remarkable product of brains and enterprise.

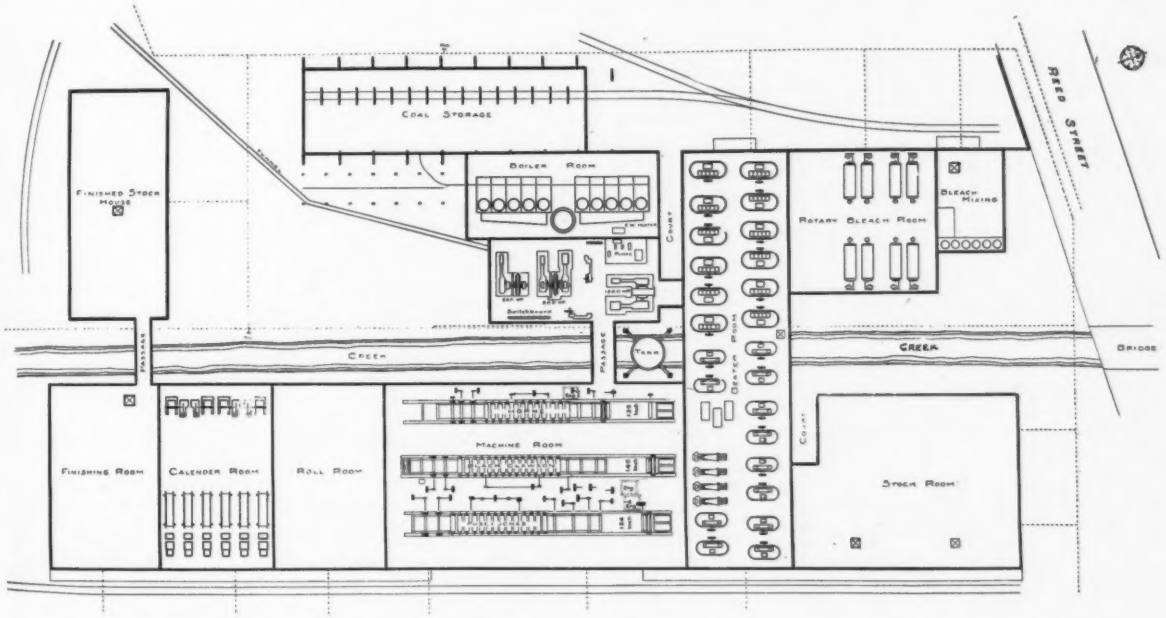
It was in the fall of 1909 that Frank H. Milham, president of the Bryant Paper Company, conceived the idea of having the plant erected. He counselled with Dan J. Albertson, architect and engineer and the plans were well under way by spring when the actual work of construction began. Since the start Mr. Albertson has been forced to keep two engineers and an assistant on the ground all the time to see that everything was carried out exactly as provided for.

DESCRIPTION OF THE NEW DIVISION.

The Milham division is located directly north of the Bryant Nos. 1 and 2, mills. The main structure is approximately 700 feet in length, north and south, by 128 feet in width. It is paralleled by a structure about 500 feet long, the two being connected by the beater room, which has a length, east and west of 288 feet. In the construction of the mill, reinforced concrete, brick and steel is used largely, though standard mill construction is used in the outlying portions of the building.

Running directly through the mill district is a creek, which is used for drainage purposes. The mill water supply is taken from the settling pond through a 20 inch cast iron pipe.

Situated at the north end of the mill is the stock house, 120 by 160 feet in dimensions and five stories high. It is equipped with two 4,000 Otis elevators, electrically driven. Adjoining is the beater room with a length of 288 feet and a width of 76 feet. It is three stories high, the top floor being devoted to the sorting room. The basement is occupied by stuff chests and drainers, all of reinforced concrete, also the line shaft, through which power is transmitted to the beaters. In the beater room proper are twelve 2,500 pound beaters, manufactured by the J. H. Horne & Sons Company, Lawrence, Mass., also twelve 1,000 pound beaters from the same concern and four Jordans made by the E. D. Jones & Sons Company, Pittsfield, Mass. The latter are electrically driven, being direct connected to motors by the Jones flexible coupling and motor connection. A dust proof floor protects the sorting room and prevents any seepage into the rest of the mill.



GROUND PLAN OF MILHAM DIVISION OF THE BRYANT PAPER COMPANY, KALAMAZOO, MICH.—DAN J. ALBERTSON, ARCHITECT.

Across the creek are the rotary bleach room and chemical room. The former being 100 by 104 feet. On the main floor are eight rotary bleach boilers, 8 by 24 in dimensions, they being the product of the Manitowoc Iron Works, Manitowoc, Wis. The dusting room is on the top floor and is equipped with railroad and cylinder dusters, rag cutters and thrashers, made by the Norwood Engineering Company, Florence, Mass. The chemical room, 48 by 72 feet, three stories, is equipped with a number of rotary bleach tubs, where bleach making liquors and others matters of this kind are conducted. The caustic chemicals are also stored here.

THE MACHINE ROOM AND ITS MACHINES.

Just south of the beater room and in the main structure of the mill is the machine room, 208 by 128 feet in size, two stories. Herein are three machines, two Fourdriniers and one of the Harper type. The latter is 136 inches in width and was made by the J. H. Horne & Sons Company. The Black-Clawson Com-

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pany, Hamilton, Ohio, has turned out a 140 inch Fourdrinier, while the firm of Pusey & Jones, Wilmington, Del., made one 154 inches in width. This latter machine is of particular interest, being the largest of its type in Michigan, also the first Pusey & Jones machine to be brought to this state.

In the basement of the machine room are three steam engines made by the American Engine Company, Bound Rock, N. J. They are of the four-cylinder type, two cylinders in each quadrant, the engines being connected to variable speed shafts which drive the machines.

The roll room, 80 by 128 feet, is designed for the storage of rolls. The supercalender room is next south and is the same size being equipped with four stacks of supercalenders from the Norwood Engineering Company. The finishing room, also of the same dimensions, has a 74 inch press cutter.

The finished stock house, three stories high and 160 by 72 feet in dimensions, will store several thousand tons of finished paper, thus enabling the mill to supply trade out of stock at a moment's notice.

The Engine Room and Boiler House.

In the west structure are located the engine room and boiler house. The former is 60 by 120 feet in size while the boiler room is 60 by 136 feet. In the engine room will be three engins. One of these is a 1,200 horse power cross compound condensing type from the Nordberg Manufacturing Company, Milwaukee. It transmits power through a rope drive to a main line shaft under the beater room, thus furnishing the motive power to drive the equipment of the beating room. The same concern will also install an 800 horse power cross compound condensing engine, direct connected to a 600 k.w. generator from the Sprague Electric Company. In connection with these two engines are two crank and fly wheel type of jet condensers manufactured by the Union Steam Pump Company, Battle Creek, Mich.

A 600 horse power poppet valve engine is direct connected to a 400 k.w. Sprague Electric Company generator. The poppet engine is the non-condensing type, the exhaust being used for heat and industrial purposes throughout the mill and adjacent coating mill. The piping is so arranged by a system of pressure regulating valves that the exhaust is automatically distributed to points required, any excess of steam being discharged into the heater and reclaimed in raising the temperature of the boiler feed water.

In the boiler room are ten 300 horse power vertical water tube boilers from the Wickes Brothers Company, Saginaw, Mich. These boilers are tested to 175 pounds steam pressure. They are steel jacketed and protected from outside influences by an additional four inches of fire brick and three inches of mineral wool. The boilers are equipped with stokers from the Detroit Stoker Company. They are of the automatic type, the magazines carrying a thirteen hour supply without refilling.

The coal is handled by immense grab buckets from a coal storage, 60 by 200 feet in size and capable of storing 8,000 tons of coal for the use of the Milham division and the rest of the plant if desired. All coal for the magazines passes through a coal crusher, which is motor driven along a track above the stokers. The grab buckets are so arranged for the handling of fuel that they will unload coal from the cars to the storage, from the cars to the magazines, from the storage to the magazines and from the storage to the cars. The same device removes all ashes and cinders and places them either in a magazine outside the building, where they can be discharged into wagons or loaded into cars, or the ashes or cinders can be loaded direct on the cars.

An interesting feature of the Milham division power plant is the fact that it is designed to later become the power plant for the entire mill. At least it is so planned.

The electric wiring and cables throughout the mill are all enclosed in conduits or pipes, the work being done by Lounsberry Brothers Company, Chicago, two former Kalamazoo boys who have secured many important contracts of this kind in the Celery City.

Plant of the Chester Paper Company at Chester, Pa.—Mill Now Undergoing Changes.

The fire protection for the mill is adequate and consists of a complete sprinkler system installed by the Automatic Sprinkler Company of America. In addition there is a 100,000 gallon underwriters' tank set on a steel tower 100 feet high and feeding the sprinkler system.

The Mill's Water Supply.

The mill's water supply needed for manufacturing purposes passes from the settling basin through a 5,000,000 gallon gravity filter and from there is discharged into a 30,000 gallon elevated tank and flows from there by gravity to all points in the mill as desired.

In addition to the equipment already mentioned the following concerns were furnished important contracts in connection with the erection of the immense plant: Fort Wayne Electric Company, switchboard; Webster Manufacturing Company, transmission line; Northern Engineering Works, piping; coal handling apparatus.

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THE PULP WOODS OF CANADA

A Classification of the Kinds and Species, Together With a Brief Statement Concerning the Pulp Making Qualities of Each—Cheaper or More Resistant Woods Will Later Be Used

By Judson A. DeCew, Chemical Engineer.

(Written for the Convention Number of The Paper Trade Journal.)

The classification of certain species of timber as pulpwood, in contradistinction to other kinds of wood, is but an arbitrary nomenclature based upon the commercial application of these particular woods in the paper trade.

The pulp woods of North America are quite distinctive species from those in common use in Europe, and were it not for the more or less free interchange of these products on this continent, these distinctions might eventually develop with us. Since the increased necessity for a more economic use of available woods has forced investigations, resourceful workers have evolved methods for converting practically any kind of wood into good pulp and paper. The problem resolves itself into one of total cost, the cost of wood and the cost of conversion, being variables for each species of wood used.

Since the spruce woods have proven to be the best adapted for the manufacture of a good paper at the least cost, these woods have become the standard from which all others are judged, and have become invested with such values as the best raw material always brings. The use of the other woods for making pulp, is a matter of trade knowledge rather than public recognition, although the practice of the future in this regard will likely alter the popular viewpoint.

A Classification of Pulp Woods.

There are a number of woods which from their properties and use may be easily classed as pulp woods, a goodly portion of these being the habitants of Eastern Canada, while others are only found in the Far West.

Eastern Woods:

White Spruce—*Picea Canadensis*, or *Picea Alba*.
Black Spruce—*Picea Marina*, or *Picea Nigra*.
Balsam—*Abies Balsamea*.
Hemlock—*Tsuga Canadensis*.
Jack Pine—*Pinus Banksiana*.
Poplar—*Populus Tremuloides*.
White Birch—*Betula Alba*.
Paper Birch—*Betula Papyrifera*.

Western Woods:

White Spruce—*Picea Engelmanni*.
Tideland Spruce—*Picea Sitchensis*.
Western Hemlock—*Tsuga Heterophylla*.
Balsam Fir—*Abies Concolor*.
White Fir—*Abies Grandis*.
White Fir—*Abies Amabilis*.
Bull Pine—*Pinus Ponderosa*.

In studying these woods in their relationship to paper making, let us first consider those properties which make the spruce wood so suitable for this purpose.

The White Spruce, *Picea Alba*, which is the most important tree north of the 60th degree of Latitude, is somewhat larger in size than its near relative, the Black Spruce. Its wood is light, soft, straight grained and satiny. The bands of summer cells are thin and the resin passages few. The color of the heart and sap is hardly distinguishable. The resin content may vary from .2 to .4 per cent. The specific gravity is .4051 and ash .32. In this wood the structiure of the spring and summer growth is more uniform than in most of the coniferous woods, the fibres are long and regular, and therefore it is found to grind easily, giving a pulp of light yellow color and a fibre that readily forms in a sheet of paper.

The Black Spruce, *Picea Nigra*, generally occurs with the White Spruce, and its wood is very similar in character and structure, although the summer cells are more resinous and there are fewer medullary rays. The color of the wood is from light red to white, the specific gravity is .4584, the ash .27 and the resin from .3 to .5 per cent.

It is noticeable that the black spruce is heavier than the white spruce, and the yield of pulp from it is therefore proportionally larger.

The Balsam Fir, *Abies Balsamifera*, is found with the spruces above described and is used in more or less quantities, mixed with the spruce pulp wood of commerce. The only noticeable difference in its character from the above, is the fact that it is lighter in weight, slightly more coarse grained and a little more resinous. Specific gravity .3819, ash .45. When ground a somewhat smaller yield is obtained, and the pulp is a little rougher in its character.

Judson A. De Cew.

Hemlock, *Tsuga Canadensis*. This wood as seen from its technical nomenclature, is practically a Canadian species, although it also occurs in Michigan, Wisconsin, and in the Alleghany mountains. Its wood is soft, not strong, brittle, coarse and non-resinous. It shows broad ummer bands, and the color varies from light brown to white. Its specific gravity is .4239 and ash .46. The resin content is very low, being about .2 per cent. Chiefly owing to its color and large summer bands, it is much less suitable for ground wood, than spruce or balsam, but owing to its non-resinous character, it is quite suitable for the production of sulphite fibre. The hemlock fibre is larger and coarser than the spruce, and since the wood is more lignified there is a lower percentage yield of cellulose.

Jack Pine. *Pinus Banksiana*. This is a species of conifer which should be of importance in pulpmaking, for there are very large quantities growing in some districts, and the tree is really too small to be of much importance for lumber. This wood which is locally called Jack Pine, presents some important technical difficulties in its use, but it will no doubt in the near future be generally utilized. The wood is light, soft and rather close grained.

The medullary rays are numerous, and these are generally very much in evidence in any low grade sulphite made from this wood. In comparison with other pulp woods, this wood is very resinous, the resin content probably averaging about 2 per cent. The heart is light brown in color and the sap white. Specific gravity, .4761, ash .23. This wood is now being used to some extent for railway

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sleepers and pulp, there being no unsurmountable objections to its use in pulp making, when proper working processes are employed.

The fibre of the Jack pine resembles the hemlock in structure, but the wood is of softer nature although heavier in weight. Amongst pulp woods therefore these two woods, with some others of similar character, might easily be placed in a class by themselves, a second grade. Amongst the broad leafed trees we have the poplar and white birch which are destined to take a place of considerable importance, in the manufacture of pulp.

Poplar, *Poplus Tremuloides* or Aspen. This is the most widely distributed North American tree, and it occurs in almost any place where virgin timber is being replaced by a younger growth. It is a small tree, barely large enough for lumber, and its wood is light, soft, close-grained and compact. The color of the heart is a light brown, but it has a thick sapwood which is nearly white. The wood is also non-resinous and its specific gravity is .4032, while its ash is .55.

Balm of Gilead, *Poplus Balsamifera.* This is an allied species to the poplar, common along the shores of northern rivers. It is a large tree but the fibre and the characteristics of the wood, are quite similar to that of the poplar. The fibre in both of these woods is short, being about one half the length of the spruce, and this is the factor which regulates largely the use of these pulp woods. The balm however is a lighter wood than the poplar, since it has a specific gravity of .3635, its ash being .66.

Of the birch family there are two closely allied species, each of which are quite suitable for making pulp.

The White Birch, *Betula Alba.* This is a short lived tree of rapid growth which sometimes reaches a diameter of two feet. It grows with the poplar on abandoned or burned lands. The wood is soft, light, close-grained and not durable. The color of its heart is light brown and the sap nearly white, the young trees having the larger percentage of sap, being the best adapted for pulp. The specific gravity of this wood is .5760 and the ash .29 per cent.

The Paper Birch, *Betula Papyrifera.* This is a very widely distributed tree throughout the whole of Canada. It is very common in the northern Atlantic region, and grows farther north than any other deciduous tree. The wood is light, hard, non-resinous and close grained. The heart has a brownish tinge but the sap is white. Specific gravity, 5955, ash .25 per cent.

The fibre of the birch woods is but slightly longer than the poplar, and they can be used to good advantage along with it or replacing it. Being about 40 to 50 per cent. heavier than poplar however, they are more difficult to bring from the forest, as they are very heavy while green and do not float well. The evident advantage in yield per cord, however, is one that should fully compensate for the extra cost of driving these woods.

In addition to the above pulp woods, which occur mainly in the Atlantic and northern interior regions there are certain species which are only found in the far west, but which are rapidly becoming of commercial importance.

White Spruce, *Picea Engelmanni.* This wood is found chiefly in the central rocky mountain region and the Peace River plateau. In this locality it forms expensive forests, at altitudes of over 5,000 feet, and grows to be a large tree, except at extreme heights. The wood is soft, satiny, and with a close straight grain. Like the eastern white spruce, the summer bands are not conspicuous and the heart wood can hardly be distinguished from the sap. The wood is lighter in weight, however, than the eastern variety, for its specific gravity is but .3449 and its yield of pulp will therefore be from 15 to 20 per cent. lower. The ash is .32.

Tide Land Spruce, *Picea Sitchensis.* This tree is found in British Columbia, within 50 miles of the coast, and grows to a large size, sometimes ten feet in diameter. The wood is soft with a close, straight grain, the heart being of a light brown color and the sap nearly white. The wood is almost as heavy as the eastern black spruce, its gravity being .4287. The ash is .17. The fibre of this tide land spruce, is very long and strong, being about 30 per cent. longer than the eastern spruce. The maximum length would be about 6.7 mm. as against 5 mm. in the eastern species. The cellulose made from this wood, should be very desirable for the manufacture of strong papers, providing it is not weakened in the process of conversion.

Western Hemlock, *Tsuga Heterophylla.* This wood is found in British Columbia and the Pacific States, growing along with the other large trees of the country. It is somewhat heavier, harder and darker than the spruce, but it is superior in many ways to the Eastern Hemlock. This wood can be satisfactorily ground, but owing to the blackness occurring in some trees, its average color would be a disadvantage. It is non-resinous in character, however, and well adapted for the manufacture of sulphite fibre.

Balsam Fir, *Abies Concolor.* This is used with the spruce for sulphite and ground wood, but like the eastern woods, the balsam is the more resinous. Its wood is soft, coarse-grained, and compact. The summer bands are narrow and the color is from light brown to white. The gravity is .3638 and the ash .85 per cent. The fibre is almost as long as the Tide Land Spruce.

White Fir, *Apies Grandis.* This is a large tree found all along the Pacific slope. It is hardly suitable for ground wood except in young trees, and then the resin content is a disadvantage. Owing to the broader summer bands, it is harder than the other woods described, but it has a long strong fibre, and will make excellent cellulose by any alkaline process.

White Fir, *Abies Amabilis.* This is another species of white fir, which is found in the valleys of the Fraser and Columbia, and on the mountain sides. In the valleys it is a fairly large tree, but on the hillsides, it exists very largely as a scrub, with a very close ringed growth. This scrub growth is very little use for anything except pulp for a tree from 50 to 60 years old would have a diameter of about 6 inches. It contains about 1 per cent. of resin, which is about the same as the species of black spruce, which also grows as scrub in these mountain regions. The specific gravity is .4228 and ash .23. The color is not too dark for ground wood, and some day it will probably be used for that purpose, although it is rather too resinous for present requirements.

In the interior of British Columbia, there is another species of pine called the Bull Pine, *Pinus Ponderosa,* which is a wood quite variable in character. This wood is supposed to be very resinous but an average sample examined by the writer, was found to contain but .67 per cent. of resin, which is quite within the workable limit. As scrub this is a faster growing wood than the spruce, and it is somewhat surprising that it should be heavier in weight.

The specific gravity of this wood will average .4715, and the ash .35.

To those interested in the study of woods either from their scientific or commercial aspect, it is a well recognised fact, that any species having a wide distribution, will, when growing under different influences of climate, soil, altitude, etc., show a considerable variation in its structure and physical characters. Any fixed data therefore, although it may represent the results of a number of observations, can only be taken as a basis from which other specimens may be judged.

In the above descriptions it has been the writer's endeavor, to show from the properties of the various woods, those attributes, which are essential in any wood for the present requirements of pulp making.

The conditions of growth in a northern country, seem to be best adapted for the development of those species, which have a soft and non-resinous wood. Naturally these woods will be exploited and used in the production of pulp and paper, until the costs of working from this source are such as to allow the profitable working of the cheaper but more resistant woods.

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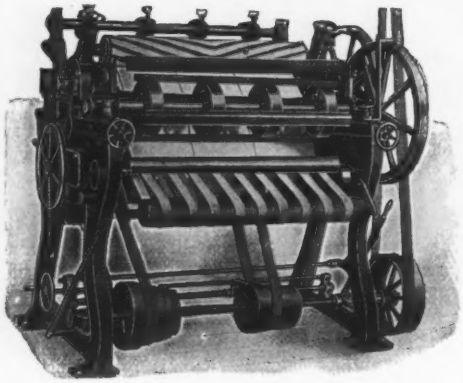

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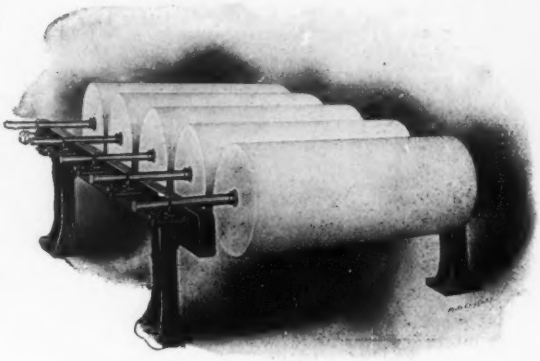

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A Pioneer in Using Hemlock for Sulphite.

[FROM OUR REGULAR CORRESPONDENT.]

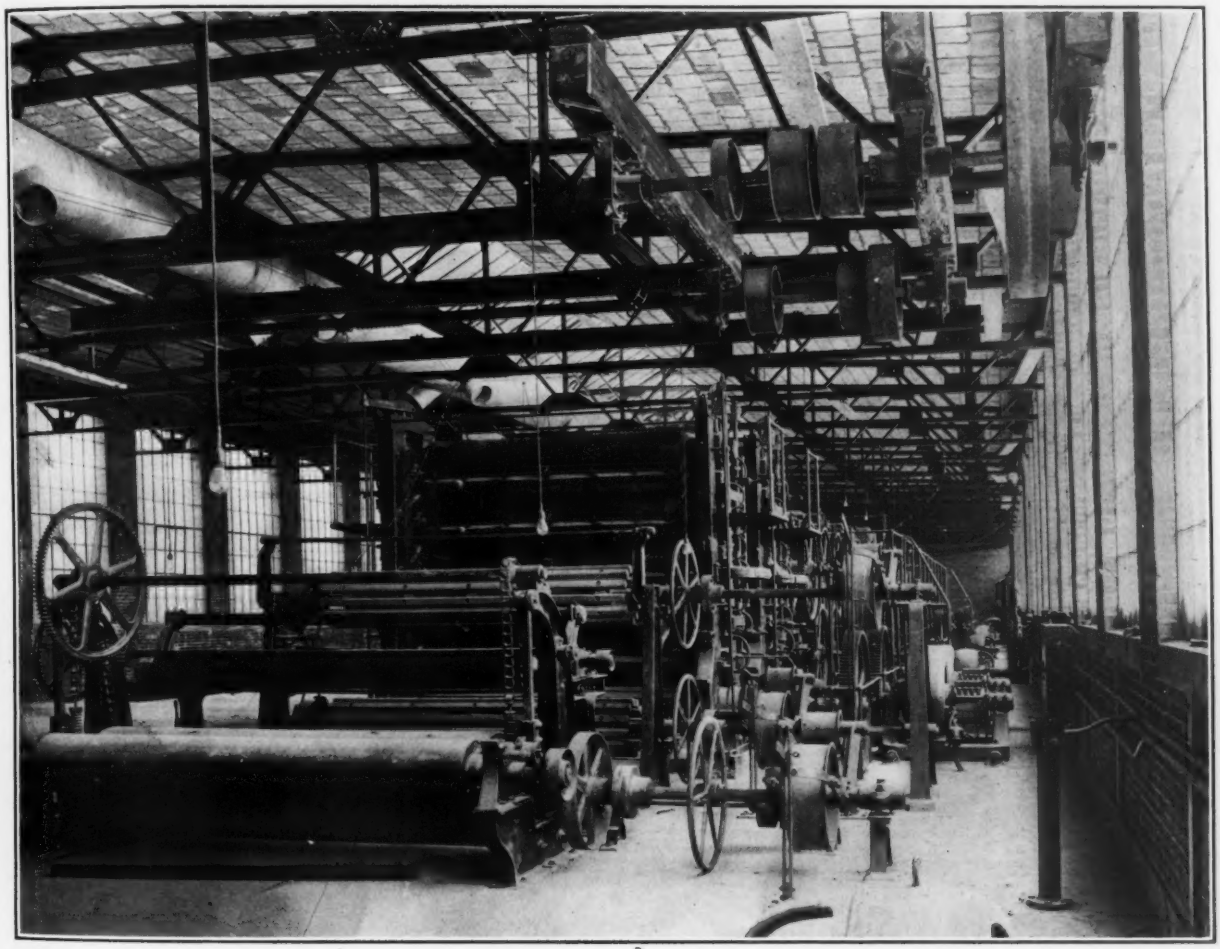
APPLETON, Wis., February 13, 1911.—The Kaukauna Fibre Company is beginning its twenty-second year of almost uninterrupted operation under most auspicious circumstances. It is not generally known, but it is nevertheless a fact, that this mill is credited with being the first in this country to successfully manufacture sulphite from hemlock wood, and this success was only due to the untiring efforts of the late Norman H. Brokaw, who was in active charge of the fibre company from its inception until his death.

Twenty-five years ago, at the time Mr. Brokaw began experimenting, spruce wood was used exclusively in the manufacture of sulphite, but with characteristic foresightedness the predicted the eventual diminution of the spruce forests in Wisconsin and Minnesota unless other grades could be substituted. He also had his eye on the vast hemlock forests of Wisconsin, which were then for the most part untouched. Accordingly he had built, after his own ideas, a miniature digester of about the capacity of an ordinary wooden pail, with proper appurtenances, and for months carried on experiments in his own office which involved the employment of nearly all known kinds of available wood. Even after results proved conclusively that hemlock wood could be utilized it required several years to put its manufacture on a practical commercial basis.

Elated with his success in producing hemlock sulphite, Mr. Brokaw next turned his attention to grinding the wood mechanically. A further series of tests were conducted in the ground wood plant of the Western Paper and Bag Company at Kaukauna, but here he met defeat.

The buildings of the fibre company are of wood and stone construction, and the plant has a present capacity of about 16 tons of hemlock sulphite per day. During the past year the three centre sections have been entirely retimbered and a new chip bin built. The boiler plant has been overhauled and put in best shape, including the addition of a steam drum of increased capacity to the boiler. A new revolving Voith screen was installed which takes the place of four flat screens and one centrifugal screen. The management of the fibre company is in the hands of the Thilmany Pulp and Paper Company, which, however, is not the owner, but which, together with the Union Bag and Paper Company, take the entire product.

FOX RIVER.



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Recently, it is added, the newly established Canadian factory on the Pacific Coast, the Canadian Pacific Sulphite Company, has endeavored to open up a trade in Japan by sending a shipment of 10 tons to Kobe; the price being $56 gold, c. i. f. Japanese port, per ton of 2,000 pounds for "easy bleaching."

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MECHANICAL TREATMENT

Its Growing Importance in Connection With Chemical Reactions

Reasons, Backed by Practical Illustrations, as to the Necessity of Co-operation of the Paper Making Engineer and Chemist, the Success of the Latter Depending on Work of the Former

By Clayton Beadle.

(Written for the Convention Number of The Paper Trade Journal.)

I have been asked by the editor to communicate an article for the special number of the Paper Trade Journal. Instead, however, of communicating an article on some definite question in some way related to the manufacture of paper, as is our general custom, what we call here a "straight from the shoulder article," it has occurred to me that it might be equally advantageous to be a little more discursive, and to deal with one or two subjects which come to my mind as I proceed. In fact I propose to do what you on your side would call "a little skirmishing around" on subjects which perhaps have little relation to one another, but which are more or less of importance in connection with the manufacture of paper.

Importance of Mechanical Aspect of Paper Making.

Although I and my associates have been more particularly connected with the chemical aspects of paper making, I have always felt, and I feel more so as time goes on, that the mechanical aspect of paper making is becoming more and more important, and that the chemical and mechanical must be considered in conjunction with one another.

Some of the processes of paper making may be described as purely mechanical, having nothing whatever to do with chemistry; but those which involve the use of chemical reactions are now in a very large measure dependent upon the mechanical side, more so than is generally admitted. It is of the utmost importance, therefore, that the chemist and the engineer should work side by side and in conjunction with one another. It would be invidious to suggest that one or other of them is to take the lead, because the work of both is of paramount importance—but the chemist must remember that whatever improvements he may effect from a chemical point of view, the same cannot be done to the same advantage without invoking the knowledge, experience and the assistance of the engineer. If the chemist is at the same time an engineer, then he obviously possess great advantages over a chemist pure and simple.

In paper making, as in other chemical industries, the chemical engineer is the man of the future, at least, these are my views upon the subject, and what I am about to discuss, will, I trust, make this point more obvious.

"Personality" or "Individuality" of Fibres.

Turning to the subject of cellulose, I have always been one of those who contend that cellulose, whatever its constitution may be, is not a chemical entity in the sense that water, sulphuric acid, salt or caustic soda, or such like simple articles are. Every particle or molecule of water is like its neighbor, whereas, it may almost be said that every fibre has its own individuality. In the case of cotton fibres, one may say that this is distinctly true, as each cotton fibre differs from its neighbor to the same extent as sheep will differ from one another in a flock, although to the inexperienced all the sheep appear to be alike. What is true of cotton is also true of flax, hemp, jute, manila and other fibres, and possibly—although perhaps to a smaller extent—of the wood fibre also. Referring again to the cotton, there are many kinds of cotton that we all know—the textile manufacturer has to reckon with this, and so must the paper maker.

Admitting, therefore, that each fibre has a personality or indi-

General View of the Plant of the Marathon Paper Mills Company, Located at Rothschilds, Wis.

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viduality, just as does each individual of a nation, there must be fibres which bear a close resemblance to one another, not only as regards appearance, but in their qualities and properties.

If a number of individuals are exposed to, say, severe heat or cold, many of them would succumb, and the same thing happens in the case of the cotton fibres. The fibres can be broken down to one dead level of inefficiency, such as by over beating, in which case the stronger fibres are made to assume the qualities of the weaker ones. As a parallel to this, we will instance the action of some of our Trade Unions, where every worker is permitted only to do as much as the least capable. As regards the fibres, also, there is just the opposite aspect—the fibres can be treated in a mass to a uniform up-grade quality, resembling the drilling of an army to make the members more efficient in arms. In each case, there still remains the personality of the fibre or person as the case may be, but the personality is largely destroyed or nullified by the levelling up or the levelling down process.

Perhaps I am carrying this similie rather too far to appeal to a practical man, but the conviction has come home to me that it is the failure on the part of chemists to recognize what may be called the personal characteristics of different kinds of raw materials (cellulose), both collectively and as individuals, which has resulted in so much disagreement and want of accordance in results.

Effects of Mechanical Treatment on Chemical Actions.

The manufacturers of explosives have enormously benefited by a recognition of the benefits to be obtained by beating the nitrated cotton, which mechanical treatment made all the difference to the results finally achieved, and until this was recognized, no solid progress was made in this particular industry. Here is a demonstration of the benefits of the mechanical levelling up of a purely chemical industry.

Stearn, who, it will be remembered, was the assistant of Swan, of Edison & Swan, and who helped Swan in the production of his first incandescent lamp, was the first, outside the inventors, to recognize the value of viscose for the production of filaments. Stearn came to me for instruction in the manufacture of viscose, and I am often amused when I think of the manner in which he used to address me. He honored me by describing himself as my pupil, although he was a man who, as regards experience and age, was old enough to be my father. No doubt, at that time, when viscose was new to him, he was able to receive some very useful instruction at my hands. Nothing more completely illustrates the driect relationship between the mechanical treatment of raw material as affecting after chemical behavior, than does the viscose process. It is possible to change the whole chemical procedure by resorting to beating raw material to the right degree and in the right manner.

Take the cotton fibre in its virgin state, as cotton wool. What is it good for? Throw same on water and it floats—and anything which floats on water is no good for paper making. If you proceed to make it into paper, you would get nothing better than a rough piece of drugget similar to some pieces of paper 700 years old which we have recently examined, and which were made of raw flax combings, having the appearance of being thrown together and not felted. Take raw cotton wool, nitrated, and the verdict will be that it is no good for explosives, no good for collodin, and no good for the production of films and celluloid. Try to mercerise it and it absolutely refuses to be mercerised. Try to convert it into viscose—it is not even possible to produce a product which can pretend to be an apology for viscose. Equally it is no good for treatment by the cupro-ammonium process.

But here let me digress and say that I opened Stearn's eyes in those early days to this very point, and showed him how vastly the mechanical treatment influenced all the subsequent life history of the product—in fact it made the difference between success and failure.

We have so often followed these changes under the microscope, and have been in consequence impressed by the fact that our experience should differ so much from the orthodox view sometimes held by cellulose chemists—which may be stated in the following words: "Cellulose is a definite chemical entity capable of entering into combination in definite proportions."

The manner in which cotton or other fibres are mechanically treated will affect the whole of its life history from a chemical standpoint. It will affect its combining proportions, if such proportions can be said to exist; and in a large manner they do exist, as well as the qualities of the finished product. This has been brought home to us in the artificial silk industry.

That little beginning when Stearn came to me for instruction in in the art of making viscose at that time for the manufacture of filaments for electric lamps—has gradually, after passing through many vicissitudes, developed into a large and world wide industry. He eventually succeeded with the lamp filaments and applied them to all his lamps. The pure laboratory stages of this work, at any rate so far as it concerns artificial silk, cost tens of thousands of pounds—the semi-laboratory stages, and before anything came back to those interested, cost at least 100,000 pounds, in fact, I would rather put it at something like 250,000 pounds, or a million dollars. Things have now changed, however, and at the present time, the amount of capital employed, and successfully employed, in the viscose artificial silk industry alone, amounts to several million pounds sterling, and there are now at the present time large works in the chief European countries, including Russia, turning out large and increasing quantities of the viscose product. Artificial silk is no longer a catch trade or a fancy trade, or a mere substitute for the natural article—it has come to stay, not as a fancy article, but as a staple industry with ever increasing application in directions not thought of by the original inventors.

As before said, that which profoundly affects all the after processes as well as the finished product, is the preliminary treatment to which the material is put, and the keystone of the process is as much mechanical a chemical.

The foregoing remarks may not be strictly true of the textile industry—my remarks are intended to apply to all outside the textile application of fibres.

The "Eibel" Process as an Illustration.

As we are mostly harping upon mechanical processes, we will now turn to a process which for the last few years has so largely engaged the attention of myself and my associates. We refer to a process which is purely mechanical—the "Eibel" process.

Let us suppose some being endowed with good mental faculties, and entirely without bias or prejudice of any kind, gazing at a modern paper machine for the first time. I am supposing that the person in question has strong imaginative and inventive faculties, but completely free from bias. After looking at the machine for some time, the explanation of the process of making paper might gradually unfold itself on first principles. The first question that such a being might ask, or suggest might well be: "Why don't you incline the wire so as to make the stuff flow down hill—and speed up the wire so as to make the speed of the wire equal to that of the natural flow of the stuff?" Or, to put it in another way: "Why don't you incline the wire to such an extent as to make the speed of the stuff equal to the speed of the wire? Under such circumstances all those ripples should disappear and you would get a better sheet."

We are all so pulled down by orthodoxy and prejudices that it is almost impossible for us to suggest such a thing. Anybody so bold as to make such a suggestion to the average paper maker, would be put down as a madman. Vested interests, orthodoxy and prejudice, which latter are very much governed by vested interests, are in a large measure responsible for our want of progress in such matters.

Herbert Spencer once said that "he did not exactly know in

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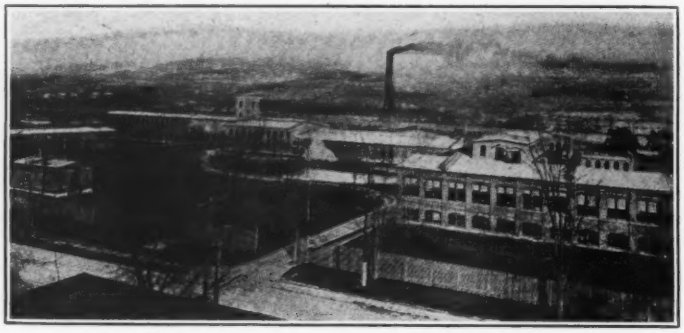
that is gaining such a valuable reputation among the trade, is "Mill Made," and at the plant of the Company shown below.



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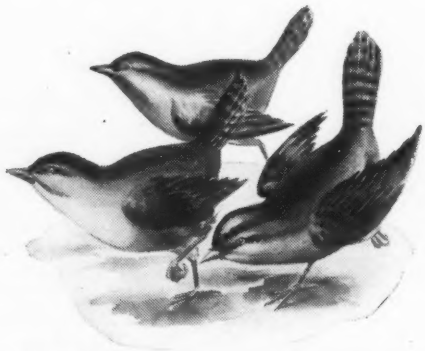


THE WRENNS, at MIDDLETOWN, OHIO, are running the most modern Blotting Paper Mill in America

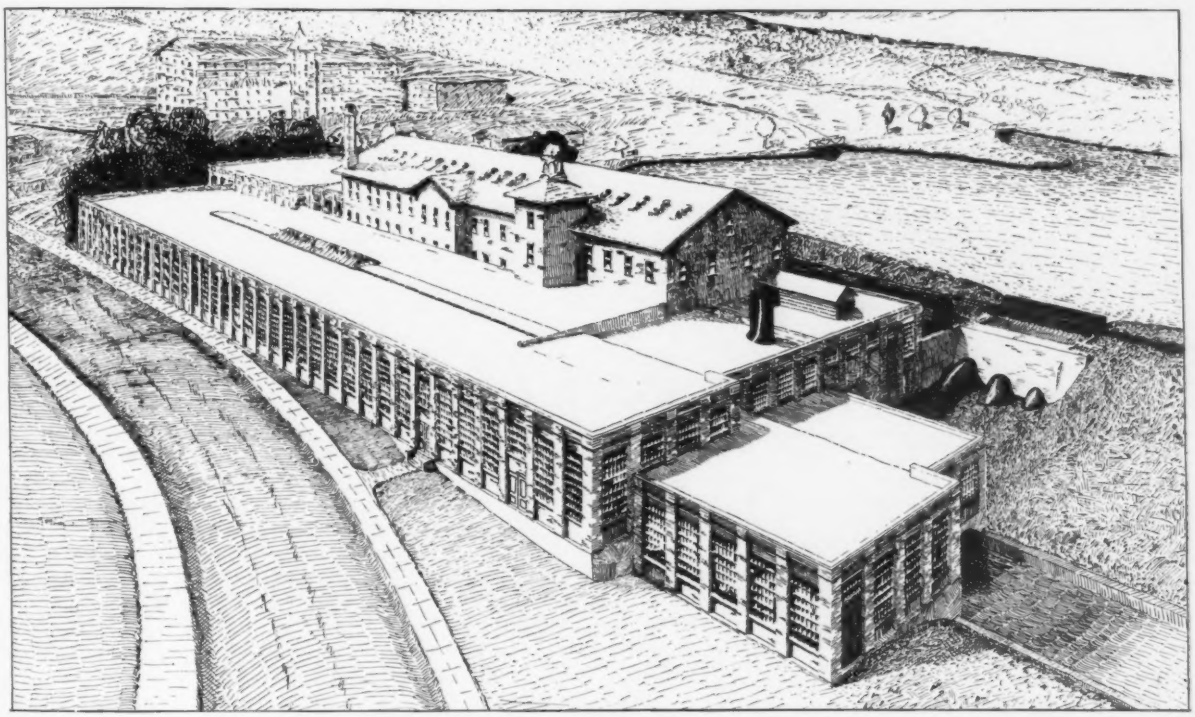
what respect he differed from ordinary men, but he supposed it was in his ability of seeing apparently insignificant relationships." Now it is sometimes by the understanding of an apparently insignificant relationship, that men have ultimately been able to startle the world by some new and important discovery. It is in the ability to realize and make use of something which many people would give the "go by" to, or would not see at all. It is in the finding of some apparently little and insignificant thing which cannot or will not be seen by others, that marks a man as something out of the common.

I regard the "Eibel" as being a remarkable illustration of the above. "Eibel" goes back to the first principles of paper making and becomes a true philosopher, and makes use of something which has been entirely overlooked by all the rest of the paper making fraternity, and at once turns it to so good account that the simple inclination of the wire in the manner indicated by Eibel himself, now constitutes one of the greatest steps in the advancement of paper making which has taken place during the last twenty or perhaps fifty years. It gives to the paper machine as good an impetus as the pneumatic tire gave to the bicycle and to the motor. Yet both are simple and might have been thought of by any man in the street, in fact, so far as the pneumatic tire is concerned, Dunlap may be said to have been a man in the street, when he discovered and applied the pneumatic tire.

Cotton Seed Hull Defibrating Machines.

I can refer to another instance which is also a purely mechanical discovery, and one of great simplicity and value particularly to the United States. I refer to the separation of the cotton seed fibre from cotton seed hulls on an entirely new principle, which is, as far as I know, the only complete method of separation. I speak of the Minck and the de Segundo machines. Both these men are well known to me, and neither of them knew anything about cotton and cotton seed hulls until they tackled this problem; but they approached it on first principles and entirely without bias, and succeeded where wiser(?) men failed.

While we are on this subject, I should like to refer to the work which Dr. Stevens and I have done in this direction, and which we venture to think has helped considerably to prove the value of this material for paper making, and also for other purposes. Although the separated cotton fibre is short to start with, the strength and other qualities of the material can be developed by beating. Thus we have taken the material after boiling and bleaching in the ordinary way, and treated it on the one hand to work "wet" and on the other hand to work "free." The former can be made to resemble a linen paper in feel and other qualities, and the latter has all the softness of a printing or a blotting paper; a large variation in strength and elasticity and other qualities can be produced from this one and the same material. This is my last amplification of the influence of mechanical treatment on the final product and with this I draw my discursive communication to a close.



"Lybster" Mill of the Lincoln Paper Mills Company, of Merritton, Ont., Canada—The Building Was Formerly Used as a Cotton Mill.

Foreign Sections of German Paper Chemists

At the recent annual meeting of the German Society of Cellstuff and Paper Chemists a motion was brought forward to the following effect: "It is resolved, that in countries outside the German Empire, sections can be formed, under the co-operation of the board, as soon as the membership in the respective countries has attained a certain number."

While, owing to having been too late for the recent meeting, the motion will only be officially presented at the next one, the secretary, Herr Ferenczi, expressed the opinion that a section could be more easily established in Austria than in any other foreign country, owing to the fact that the largest proportion of foreign members is now there. He suggested preparatory action in the meantime, with a view to the question being thoroughly discussed.

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INDUCTION MOTORS FOR PAPER MILLS

With Minor Exceptions all the Machinery in the Mills and Bag Factory of the Union Bag and Paper Company in Northern New York Are Successfully Operated by Induction Motors

(Written for the Convention Number of THE PAPER TRADE JOURNAL.)

An interesting example of the advantages of induction motors for paper mill work is afforded by the extensive paper mills and paper bag factory of the Union Bag and Paper Company, located at Hudson Falls, New York. This company operates an important group of eight mills, one located at Hadley, N. Y., three at Balston Spa., N. Y., and four at Hudson Falls. These mills have a combined output of 370 tons of paper per twenty-four hours. The Hudson Falls mills produce about 265 tons, practically all of which is utilized by the company's paper bag factory at that place.

POWER FROM HYDRO-ELECTRIC STATION.

All the machinery in the various pulp and paper mills and in the bag factory was originally operated by water power supplemented by steam engines, but at present, with the exception of the grinders, which are water-wheel driven, and one steam driven paper machine, the machinery is operated by the General Electric Company's induction motors supplied with current from two main hydro-electric power stations located on the banks of the Hudson River at Baker's Falls. At this point an effective head of 58 feet is obtained by means of a horse-shoe shaped crib dam thrown across the river just above the falls, which furnishes ample water power for both the Baker's Falls and the Moreau power houses.

The Baker's Falls power house, built in 1901, represents the first hydro-electric development undertaken by the company. It is equipped with three 750 kw. 6,600 volt, three-phase, 40-cycle generators, driven by three 1,200 h.p. double runner water turbines. The Moreau power house on the opposite bank was built later to satisfy the subsequent rapid increase in the demand for electric service. It is designed for an ultimate installation of five 2000 kw. generators, and a concrete canal extending from the crib dam to

250 H. P. MOTOR DRIVING ELEVEN CENTRIFUGAL SCREENS, 75 H. P. MOTOR DRIVING SIX WET PRESSES, AND 150 H. P. MOTOR DRIVING TWO 16 INCH CENTRIFUGAL STOCK PUMPS.

its penstocks furnishes it with an effective head of 58 feet. The present equipment consists of one 2,000 kw. 6,600 volt, three-phase 40-cycle generator, directly connected to a double-runner turbine, and one 150 kw., 125 volt exciter separately driven by a 19-inch single-runner turbine.

STEAM-DRIVEN GENERATOR IN READINESS.

Although the quantity of water available is ordinarily sufficient to satisfy the power demands of both of these stations, an auxiliary steam-driven generator outfit, located in the Fenimore mill, is provided to insure uninterrupted electric service in case of low water, or injury to any one of the generator units in the hydro-electric stations. This reserve generating equipment consists of a 1,000 kw. 550-volt, three-phase 40-cycle generator driven by a Hamilton Corliss engine, and provided with a belt connected exciter. An air blast transformer of 1,100 kw. capacity is employed to step up the generator potential to 5,600 volts, equivalent to the voltage maintained at the mill bus bars, thus permitting the operation of the reserve generator in multiple with either of the hydro-electric plants. This auxiliary generator outfit receives its steam supply from the ample boiler equipment furnishing steam to the sulphite

GENERAL VIEW OF BAG FACTORY, ALLEN DIVISION, AND BAKER'S FALLS PAPER MILLS OF THE UNION BAG AND PAPER COMPANY.

digesters in the Fenimore mill, and therefore, is maintained in a state of constant readiness to render immediate service.

The electrical equipment at Hudson Falls includes 74 induction motors ranging in size from 1 to 250 h.p., and aggregating about 4,000 h.p. They operate on 550 volt, three-phase, 40-cycle circuits, and drive a great variety of machines, practically all of which are required to run at uniform speeds. In fact, the absolutely unvarying speed maintainable by induction motors constitutes one of their most valuable qualifications for operating paper making machinery, since a lack of uniformity in speed, or any interruption to continuous operation greatly impairs the quality of the paper made.

The grouping of the various mills of this plant shows in an interesting manner the very general and effective application of motor drive throughout the works, beginning at the saw mill receiving the pulp logs, thence through the twenty-five or thirty separate operations of the pulp and paper mills to the bag factory turning out the finished product.

In the saw mill located about 100 yards up stream from the pulp mills, two 65-inch circular saws, an air compressor for the log kickers, and a chain log conveyor are driven in a group by a 100 h.p. motor; while one 75 h.p., two 50 h.p., and one 20 h.p. motors operate the various sections of a very advantageously arranged wood conveyor system connecting the saw mill with the pulp mill and the wood yards at the railway tracks.

The quick and continuous operation of the conveyor system is of great importance. The wood is received by rail from the company's forest reserves in Canada and the Adirondacks. In the wood yards it is rapidly unloaded into hoppers at the foot of the wood piles and piled up by means of two sets of extendable butterfly conveyors, operated by a 15 h.p. motor enclosed in a small movable house placed at the upper end of the conveyors. When the wood pile attains a height which interferes with the proper operation of the conveyors, the motor house is moved to the highest point on the pile and the conveyors extended the required amount by the addition of a sufficient number of chain links. The wood thus piled up is subsequently transferred to the wood room with the aid of a portable motor-driven unloading conveyor consisting of a 15-h.p. motor mounted on a small truck. This appliance runs back and forth on rails laid parallel to the wood piles, and taking off the wood rapidly from any section of the piles transfers it to

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Mills at Newton Falls, N. Y.

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the main conveyor running to the wood room from which it is sent to the grinders in the pulp mills or to the barkers and chippers in the sulphite mill.

Pulp mills Nos. 1 and 2 comprise the main grinder stations. Their grinders and wet machines are still driven by waterwheels; but significant results obtained from the motor-driven grinders of one of the company's plants located near their Canadian forest reserve, may have some influence on the future practice at Hudson Falls. In the case alluded to, induction motors of 1200 h.p. each, drive the grinders in pairs, the grinder shafts being coupled to the motor shafts.

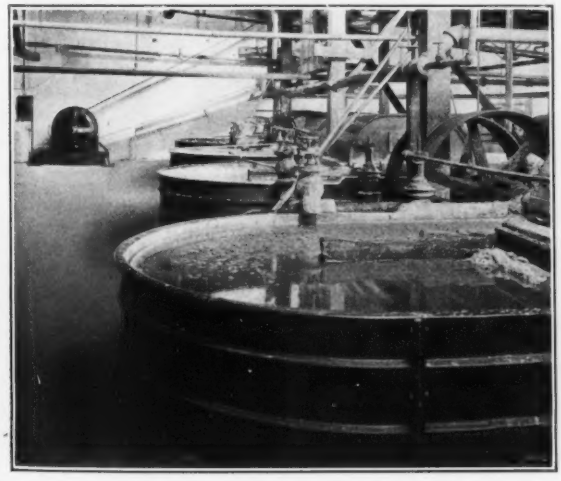
Both the mechanical pulp or ground wood and the chemical pulp or sulphite processes are employed in the preparation of the raw material. The Fenimore mill produces all the sulphite required by all the mills of the group. In its wood room a 200 h.p. motor operates twelve barkers, two chippers and a shavings conveyor, and a 100 h.p. motor drives a splitter, a shavings screen and a conveyor for carrying the shavings to the furnaces of the boiler equipment furnishing steam for the sulphite digesters and for the 1000 kw. auxiliary generator plant whenever necessary.

Boiler Room Appliances Motor-Driven.

It is noteworthy that all the appliances of the boiler room such as coal conveyors, ash conveyors, etc., and all the machinery of the adjoining repair shop are electrically operated throughout, the induction motors employed ranging in size from 10 to 50 h.p.

The digester house contains four digesters, each 15 feet in diameter and 49 feet high, constructed of heavy steel plate and lined with acid resisting material. The conveyor for carrying the chips to the charging floor is operated by a 30 h.p. motor, and a small 5 h.p. motor operated passenger elevator is provided for the use of the attendant of the storage bins located directly over the digesters.

The acid used in the digesters is manufactured in a separate tower, constructed of brick, from which it is pumped into the digesters by centrifugal acid pumps direct driven by two 15 h.p.



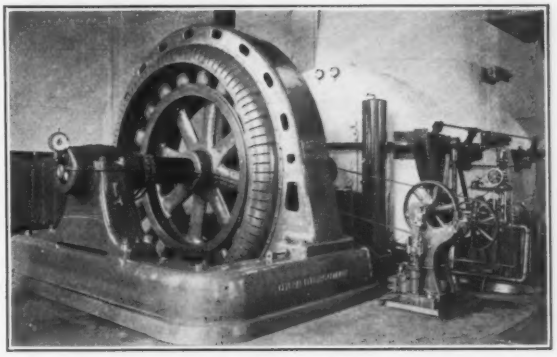
General Electric 175 H. P. Induction Motor in Beater Room.

motors. A 10 h.p. motor driven elevator conveys the raw material to the charging floor of the acid tower, and a 10 h.p. motor drives the draft fan for the sulphite burners.

The large supply of water required by the various processes carried on in this mill is ordinarily pumped from the river by the four triplex and one 6-inch centrifugal pumps of the pumping station located at the river's edge. An auxiliary water supply, however, is provided in the form of two artesian wells with motor driven air compressors and pumps, located between the mill buildings and the river bank.

Some of the other more important machines of the sulphite mill are eleven screens group-driven by a 250 h.p. motor, eight wet presses operated by a 75 h.p. motor, and two 16-inch centrifugal stock pumps driven by a 150 h.p. motor. These machines and motors, installed in a compact group, serve to centralize all those operations of the sulphite process occuring between the stock tanks receiving the washed output of the digesters and the storage tanks holding the screened and pressed pulp ready for use in the paper mills.

The delivery of sulphite to the various paper mills is facilitated



General Electric, 2,000 K. W., 6,600 Volt, Three-Phase Generator, Water Wheel Driven—Moreau Power House.

by an industrial electric railway, operating on both banks of the river and crossing the latter on a concrete arch bridge, which at the time of its construction, in 1907, was the largest of its type in the world. The motor cars are two ordinary street railway outfits converted for this service. They operate on a 500 volt direct current circuit supplied from a motor-generator set consisting of a 60 h.p. induction motor taking current from the mill supply circuits and driving a 400 kw. direct-current generator located in the wood room of the Allen Division mills.

The Baker's Falls Division and the Allen Division mills, located in a group with the paper bag factory on the east bank of the river below the Baker's Falls dam, comprise the paper mills proper. The Baker's Falls mill is the older of the two, and although some of its buildings are very old, its waterwheel and steam-driven equipment has been quite as successfully replaced by electric motor drive as those of the newer mills.

The combined machinery of the two paper mills includes eighteen stock beaters, three mixers, six Jordans or refining engines, which control the uniformity of the stock before delivery to eleven paper machines, all of which require an aggregate motor energy of about 1800 h.p. In the Allen mill the motor equipment replaces two steam engines, now held in reserve. Group-drive is the rule, a number of beaters and one Jordan constituting a group driven by a motor of suitable horse-power. The motors operating the various feeder groups range in size from 100 to 250 h.p.; those driving the paper machines range from 60 to 250 h.p. The six paper machines in the Allen mill are divided into two groups of three machines each, one group being driven by a 175 h.p. motor and the other by a 250 h.p. motor. A large number of smaller motors ranging in size from 17 to 30 h.p. are used for a great variety of purposes such as operating elevators, driving cutting room machinery and draft fans and working the feed water pumps to the boilers supplying steam for heating the drying cylinders of the paper machines.

Advantage of the Electric Service.

The decided advantage of electric service is plainly evident throughout the plant, and the ready capability of electric motor drive to satisfactorily overcome practically all the inherent shortcomings of waterwheel and steam engine operation appears to be

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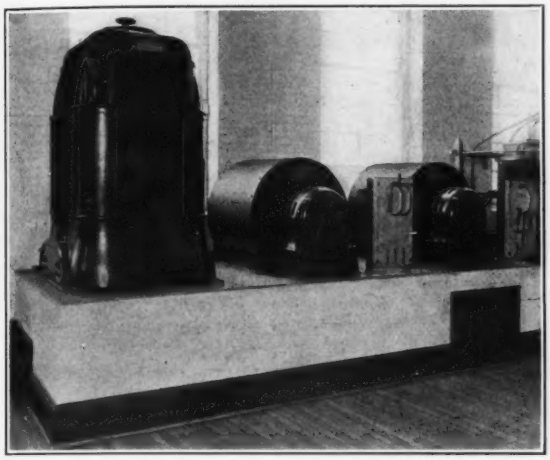
fully appreciated. The large overload capacity of the electric motors has been found especially valuable for meeting the unusually severe starting conditions obtaining in the case of many of the machines; while cleanliness, that most desirable and important condition contributing to successful paper making has been attained to a maximum degree by the complete banishment of belts, pulleys and shafting, all of which are conveyors of dust, dirt, grease and other kinds of filth.

Similar conditions prevail in the paper bag factory where a large number of automatic bag machines, printing presses, embossing



General Electric, 300 K. W., 6,600/2,300 Volt, Air Blast Transformer, with Duplicate Blower Outfit.

machines, cutters and a great variety of finishing room machines are operated at high efficiency by various group systems of motor drive.

The elimination of mechanical transmission or friction losses have effected a saving of at least 50 per cent. of the power delivered by the waterwheel shafts, and the present equipment of the hydro-electric station not only supplies ample power for operating and lighting the mills, but furnishes current to the towns of Hudson Falls and Fort Edward, and also transmits it at 22,000 volts to the Mechanicville substation of the Hudson Valley Railroad.

How the Lighting Is Effected.

The lighting of the mills is effected by a mixed system of incandescent and arc lamps. Flaming arcs have been adopted for night work on the outside, and enclosed arcs are used in the bag factory where the ceilings are high.

The success attending the electrification of these mills is a repetition of the history of many other similar plants originally designed for waterwheel and steam engine operation and subsequently provided with motor drive. The advantages gained are so positive as to require very little demonstration other than the statement that like all operators who have tried electric service, the officials of the Union Bag and Paper Company are enthusiastic advocates of the use of induction motors as the most suitable means for satisfying the severe conditions of paper mill work.

Fred C. Anderson, Mill Engineer.

[from our regular correspondent.]

Fred C. Anderson, who drew the plans of the new mill of the Parsons Pulp and Lumber Company, of Parsons, W. Va., is a consulting and construction engineer, with offices at Carthage, N. Y. He is a young man who has had twenty years' experience in the industry, in which he has been a machinery draughtsman, a worker in nearly all kinds and departments of mills, a draughter of plans for mills and a constructor of the buildings based on his own plans.

In a brief sketch of his career, printed in The Paper Trade Journal last April, when he opened offices on his own account, the following statement was made as a summary of his qualifications for success in his chosen field:

"Having thoroughly learned the paper trade in addition to the engineering side of the business, Mr. Anderson is competent to plan a mill, build it and run it after it is built. Knowing the results to be accomplished, he is able to plan a mill with these ends in view, and thus to work completely and directly from the start."

Racquette River Paper Company's Plant Completed

Readers of The Paper Trade Journal have been kept informed in regard to the progress made in the reconstruction and enlargement of the plant of the Racquette River Paper Company at Potsdam, N. Y.

The plant has been fully completed along the lines as originally planned, and is now a fully equipped three machine mill, comprising also a sulphite mill of 50 tons daily capacity, with every accessory of wood room and wood preparing machinery to make it complete. There is also a ground wood plant consisting of eight grinders, which, with the sulphite mill, furnish the raw material for the 70 tons of finished paper per day which the plant turns out.

For power there is a hydraulic development which under full head gives 3,000 horse power; a steam plant of 1,800 horse power, and an electric development of nearly 1,500 horse power.

Electric power is used to drive the constant speed lines of all paper machines, their variable lines being operated by special variable speed engines designed for that purpose and doing away with cones, step pulleys or other speed changing transmission devices. Electric power is also utilized in the operation of the machine shop; to run all machinery in the finishing and cutting room, and for running the elevators and the various smaller operations about the mill wherever it is difficult to run lines of shafting. On account of the low water that is sometimes experienced on the Racquette River the company recently installed an 800 horse power steam turbine driven electric generator, so that the mill need not cease operations, but can make full production even though the water power be lacking. The equipment of motors includes one 200 horse power for operating the wood room; one 200 horse power for driving the sulphite wet room; one 150 horse power for driving the acid plant—besides the various motors on the paper machines and the smaller motors for special work in other parts of the mill.

The electric lighting of the plant is being put in under plans furnished by the National Electric Lamp Association, using pipe conduit work throughout for both power and lighting lines. The use of the "Mazda Tungsten" lamps in large units is a feature of the illumination, and is proving most satisfactory. All electrical apparatus in this plant is supplied by the General Electric Company.

The heating of the plant is very successfully done by two direct engine driven hot air fans with ample heating coils, the distribution of the hot air under the concrete roof of the mill overcoming condensation troubles.

There has been recently added to the finishing room equipment a motor driven 130 inch extra heavy Hamblet revolving cutter, and one of the latest pattern twentieth century "Seybold" clamp cutters.

This mill is equipped to make a wide variety of wrapping papers, its sample book showing a regular line of about a dozen different grades. The company makes a specialty of catering to the mixed carload trade for the interior jobber, and believe in the policy of a wide distribution of its product. There is ample raw material behind this plant, insuring its operation for years to come without regard to adverse action (if such be taken) by our Canadian neighbors.

Z. & W. M. CRANE

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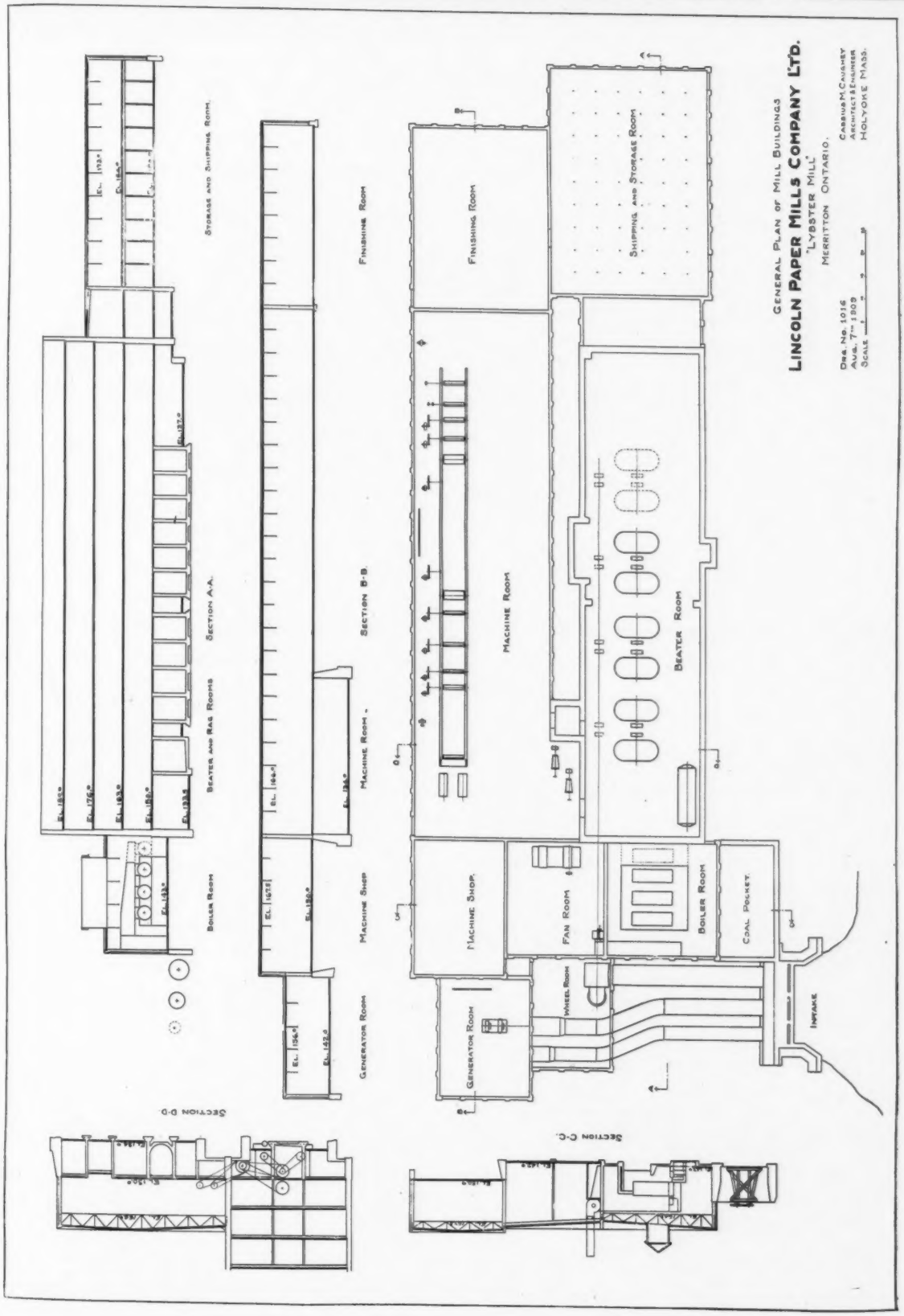
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Dwg. No. 1016
Aug. 7th 1909
Scale
STORAGE AND SHIPPING ROOM
BEATER AND RAG ROOMS
BOILER ROOM
SECTION A-A.
FINISHING ROOM
MACHINE ROOM
MACHINE SHOP
GENERATOR ROOM
SECTION B-B.
SECTION D-D.
SHIPPING AND STORAGE ROOM
FINISHING ROOM
MACHINE ROOM
BEATER ROOM
MACHINE SHOP
FAN ROOM
BOILER ROOM
COAL POCKET
GENERATOR ROOM
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SECTION C-C.

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NEW MILL OF LINCOLN PAPER MILLS CO.

By Changes and Enlargements the Company Makes Over an Old Cotton Mill into an Up to Date Paper Mill—Description of Its Construction and Equipment

(Written for the Convention Number of THE PAPER TRADE JOURNAL.)

The new mill of the Lincoln Paper Mills Company, Ltd., of Merriton, Ont., is situated on the old Welland Canal, nine miles from Niagara Falls, and is reached by the Grand Trunk R. R., and by the Niagara Falls, St. Catharines & Toronto Electric Railway.

The Lincoln Paper Mills Company, Ltd., formerly owned and operated two paper mills in the town of Merriton, but one of these,—a tissue mill—was burned a few years ago, leaving the company but one mill—the "Lincoln"—with one paper machine.

Under the able management of Welland D. Woodruff of St. Catharines, the company's business grew to such an extent that it was necessary to build and add another machine to take care of its orders. So the company bought the old Lybster cotton mill property. This included a 1,400 h.p. water privilege, and a four story wooden and stone building, 50 by 210 feet inside and 13 feet from floor to floor. There was a nine foot basement under half of the mill and when it was decided that this building was best adapted for a beater room, rag room, and future printing room or bag manufacturing department, a suitable basement was planned. It contains two beater chests and wine drainers. A steel "I" beam and concrete floor was substituted for the main wooden floor, and six 1,000-pound combined beaters and washers,—with space for four more,—were placed upon it and over the chests and drainers. Each beater may be emptied into any drainer or either beater chest. E. D. Jones & Sons Company of Pittsfield, Mass., furnished the beaters and the Imperial Wagg Jordan.

On the floor above the beaters were placed the rag cutters, dusters, etc., and a rotary bleach boiler, made by the Holyoke Steam Boiler Works, of Holyoke, Mass., was placed at one end of the beater room below.

THE MACHINE ROOM, DIMENSIONS AND EQUIPMENT.

On account of the position of the old mill on the property it was necessary to place the machine room in front of, and parallel to it. This room was made wide enough to accommodate two machines, one of which, made by the Bagley & Sewall Company, of Watertown, New York, is installed. It is equipped with the new variable speed multiple electric motor drive, furnished by the Standard Engineering Corporation, of Wilmington, Del. The room is 62 x 230 feet inside with 16 feet between trusses and floor. The fan pump, suction pumps, and stock pump are in the basement, which was made just large enough to accommodate them; also the chest, and the constant speed-line shaft. The chest is directly below the screens and forms their support. The screens were furnished by the Watreous Engine Works Company, of Brantford, Ont., Canada.

The finishing room, 62 x 80 feet, and 16 feet to trusses, is a continuation of the machine room with a 16-inch wall between, while beside it, and extending from the south end of the beater room, is the storage and shipping room, 70 x 100 feet with two floors. The first story is 14 feet, the second 9 feet to trusses. An electric elevator brings the paper from the lower floor to the second, which is the shipping floor.

At the opposite end of the machine room is the machine shop, 40 x 60 feet, with 18 feet between floor and trusses. Beyond this is the generator room 40 x 50 feet, with 14 feet to trusses. At the side of the machine shop is the fan room, with the boiler room beyond, at the north end of the beater room; at the side of the generator room is the wheel room.

In all the new work the walls are of brick on concrete foundations, the floors are of concrete—or concrete on steel—and the roofs are of hollow tile on steel purlius and trusses. The "Hope" steel sash, and steel door frames and guards were put in. The only wood used was for the doors.

THE CONSTRUCTION AND EQUIPMENT OF BOILER HOUSE.

Three 72-inch horizontal return tubular boilers,—with room for a fourth,—each having 118 3-inch tubes 18 feet long, and each equipped with a 6x6-foot Murphy furnace, supplies steam at 70 pounds pressure for drying the paper, heating the mill, and running the auxilliary feed pump and the stoker engine. The boilers are of the suspended type and were furnished by the Waterous Engine Works Co. of Brantford, Canada.

Coal cars are run in on a siding over the coal pocket and dumped. This pocket is 20 x 50 feet inside and 17 feet deep from top of rail. Seven feet at the bottom is for a reserve supply and when used must be shovelled into the magazine doors of the furnaces.

An economizer of 240 tubes, furnished by the B. F. Sturtevant Company of Boston is at one side of the room. It is by-passed beneath, and draught is furnished by a No. 10 Sturtevant multivane exhauster, which is in the fan room. This room also contains a Greene heating fan, the boiler feed pumps, hot well, and the Lombard governor for the water wheel driving the beater line shaft. A 6 x 8 inch Gould Triplex Power pump draws the water from the hot well and forces it through the economizer into the boilers. This pump is supplemented by a 7 1-2 x 5 x 10 inch steam pump, controlled by a Fischer governor, which starts the pump the moment that the pressure in the feed line drops.

WATER AND ELECTRICITY FURNISH THE POWER.

The beater line shaft is direct connected to a single horizontal water wheel. This wheel supplies power to drive the beaters and washers, Jordans, pumps, rag-room machinery, heating fan, exhauster, machine shop, and the rotary bleach boiler. The machine shop and the heating fan have an auxiliary motor drive.

A pair of horizontal water wheels, regulated by a second Lombard governor, are direct connected to a pair of generators, which furnish direct current to drive the paper machine, finishing room machinery, elevators, etc., and to light the mill. A three-throw switch at the main switchboard allows of the use of current from the generators—or from the city in case the generators are down—for the elevators, machine shop, and heating fan, and for lights. One motor on the main floor of the machine room drives the constant speed line in the basement; ten other motors complete the drive for the paper machine. The Crocker-Wheeler Co. of Ampere, N. J., supplied the electrical appliances, and the Jenks Machine Company of Sherbrooke, P. Q., furnished the water wheels and penstocks.

The paper made will be principally cement sack and heavy tag, with occasionally a small amount of lighter weights. On account of the proposed variety of product, special consideration was given to the requirements in selecting the paper machine. It is a Fourdrinier with a wire 65 feet by 112 inches. There are three presses, 26 dryers, 2 felt dryers, 2 10-roll stacks of calenders, reel slitter and winder. The machine was designed for a speed of 450 feet per minute.

MAXIMUM DAYLIGHT FOR MACHINE ROOM.

The maximum amount of daylight was secured for this room by the use of steel sash 14 feet high by 7 feet 7 inches wide and with only a 2 foot, 5 inch pilaster between. A 10 x 70 foot skylight over the center isle between the present and the future machines gives an abundance of light in front of the dryers. The sash are double glazed. The construction and ventilation of the room are such that no hoods will be needed over the dryers.

Water for the mill supply is taken from the canal at a point about one mile above the mill and is brought down in a twelve inch cast iron pipe under a hundred foot head. It is much cleaner than that at the mill, and the pressure under which it is delivered obviates the necessity for pumps.

After due consideration the company decided to build the mill by day work, although it was realized that it would take a longer time than an experienced contractor would need. They expect to begin to make paper during the early part of the year.

The mill was designed by Cassius M. Caughey of Holyoke, Mass.

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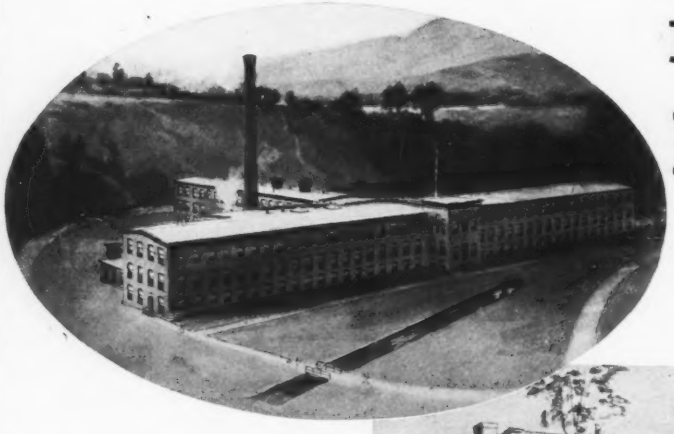

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PAPERS

DALTON, MASS., U. S. A.

AN IDEAL BOARD MILL

The Plant at Alton, Ill., Embodies All the Latest Ideas in That Line

The New Mill of the Alton Box Board and Paper Company Is a Straw and Combination Board Mill—Its Location, Construction and Equipment—Has Largest Board Machine

By W. L. Thompson.

(Written for the Convention Number of The Paper Trade Journal.)

At Alton, Ill., there has recently been completed and put into successful operation an extensive mill property which is worthy of special notice by reason of the fact that there has been installed therein the largest cylinder machine ever constructed. Coupled with this fact is the exceptionally compact arrangement and the highly efficient facilities for handling the raw materials, the materials in process and the finished product, which cause this splendid mill to stand out as a model of board mill construction and equipment.

The selection of the site was made after the most careful consideration of commercial conditions and the facilities afforded for transportation.

The mill was only recently put in operation, and is successfully meeting the requirements of a modern mill. In order to give an idea of the construction and equipment of the property it will be necessary to follow as nearly as possible the manufacturing process.

The property was constructed primarily for the manufacture of straw board, but the equipment has been so selected and arranged that all grades of box boards can be produced.

New Straw and Combination Box Board Plant of the Alton Box Board and Paper Company, Located at Alton, Ill.

Description of Mill Buildings.

The mill buildings, although arranged in one group, are practically distinct in their division, and consist of a rotary room 150 feet in length and 50 feet in width, two stories in height; a cooked stock house 158 feet in length and 45 feet in width, one story, 32 feet in height; a beater room 116 feet in length and 77 feet in width, basement under its entire floor area; a machine room 385 feet in length and 48 feet in width, with basement; a finished product warehouse 114 feet in length and 82 feet in width; a sheet liner room and a liner stock room each 80 feet in length and 34 feet in width; a paper stock warehouse with a floor area of 5,800 square feet.

The power plant is composed of an engine room 83 feet in length and 66 feet in width; a pump and heater room having a floor area of 1,380 square feet, and a boiler house 100 feet in length and 46 feet in width. The power plant is located in the open end hollow square formed by the mill buildings.

All buildings are constructed of practically indestructible materials, and their design is ideal for the purpose for which they are intended. The trackage facilities for handling both the raw stock and finished product are excellent, tracks having been provided for incoming and outgoing shipments, thus eliminating loss of time in handling.

The supply of straw to the rotary room is delivered to the straw shed, 109 feet long, direct from the cars, wagons or by an industrial railway system leading from the straw storage. Through the entire length of the straw shed a continuous conveyor operates and delivers the straw to the rotary room.

The Rotary Room and Cooked Stock House.

The equipment in the rotary room consists of twelve standard Globe rotaries, each 14 feet in diameter, arranged in two lines and supported upon structural steel under-framing. The detail of installation has been so arranged that the rapid handling of both raw and cooked stock is accomplished and the rotaries are thoroughly insulated. The rotary equipment was furnished by the McNeil Boiler Company.

The cooked stock from the rotary room is delivered to and distributed throughout the cooked stock house by a conveyor system designed and installed to make possible the delivery of the stock from any rotary at any desired point in the cooked stock house.

The Beater Room Arrangement.

In the beater room an installation of ten Dayton Globe Iron Works iron tub beater engines, each of a capacity of 1,500 pounds, arranged in two sections and driven from a line shaft located in the basement, has been made. The cooked stock is delivered to the beater engines by a double line of endless conveyors operating the entire length of the cooked stock house, while the various grades of stock for the manufacture of combination boards may be readily handled from the paper stock warehouse, which adjoins the beater room, into the beater engines with the least possible labor expense.

All stock leaving the beater engines is delivered by gravity into the stuff chests, which are located in the basement of the machine room, immediately adjacent to the dividing wall between the same and the basement of the beater room.

The machine room houses, on the main floor, four large size J. H. Horne & Sons Company's Jordan refining engines; the Reeves variable speed transmission, which is of the largest size manufactured by the Reeves Pulley Company; also the largest cylinder mold machine ever constructed, together with the screens and other appurtenances for securing quality as well as quantity of manufactured product.

There are in the basement, in addition to the stuff chests, four duplex Beloit stuff pumps, together with the drainage vaults and

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pumps, the centrifugal recirculating water pumps and the save-all equipment.

The Board Machine Is 145 Inches Wide.

The board machine equipment is a Beloit Iron Works six cylinder machine fitted with cylinder molds 36 inches in diameter and 145 inches in length of face.

Nine sets of specially constructed squeeze rolls and three presses, as well as eighty 42 inch dryer rolls and two stacks of calenders have been included in the detail of the board machines equipment, and indicates the completeness of this element of the mill installation.

Condensation in Rolls—Ventilation.

Much care and attention has been given to the arrangement of the system for removing the water created from the condensation from the drying rolls, and for the effective ventilation of the machine room, to the end that the maximum of efficiency may at all times be maintained in the drying process, and that the quality of the finished product may remain constantly uniform. With but minor alterations in detail, the usual siphon pipe arrangement has been provided for each dryer roll, and attached to the same is an equipment of the most modern fittings provided by the Consolidated Engineering Company for controlling the application of a vacuum to the siphon pipes for accomplishing the instantaneous removal of all water caused by condensation from the dryer roll.

There has been constructed a metal hood above and extending the entire length of the dryer section of the board machine, to provide for the proper removal of the moisture driven out of the product in the drying process. From beneath this hood the vapors are drawn by large steel plate fans, which in turn discharge into the atmosphere. This portion of the plant equipment was provided by Worthing & Bassler, of Chicago.

A special department has been provided for the sheet liner equipment, which has been so located as to permit of the easy delivery of sheets to the department, either from the machine room direct or from the finishing room and finished product warehouse. Adjacent to and connected with the machine room is the liner stock warehouse, arranged for the convenient storage and handling of the liner stock, both for the paste liner on the board machine and for the sheet liner department.

The finished product warehouse is so designed and located that access thereto is had from the machine room, liner stock warehouse and the sheet liner department, thus enabling all product to be quickly and economically handled.

A warehouse which is adjacent to and directly connected with the beater room has been constructed, which is of the same general type of construction as the other buildings, for the storage and proper handling of the waste paper stock and other raw materials used in the production of combination boards. The storage yard for straw is located at some distance from the mill buildings. This is because of the inflammable character of this material.

The Power Equipment of the Plant.

The power equipment of the plant, including the boiler house, pump room and engine house, occupy the open court between the machine room and the rotary room, and contain all of the power generating equipment. The balance of the power equipment is placed in the engine room and basement to same, 14 feet in depth.

Electrical power transmission for the operation of the rotary room, the straw, stock, coal and ashes conveyors, finishing machinery, ventilating apparatus and several other items of equipment of minor capacity, has been employed.

Mechanical transmission of power to the beater room and machine room is employed, there being installed in the basement of the former one heavy line shaft, which was provided by the Dodge Manufacturing Company, and is supported in extra heavy self-oiling bearings, mounted upon massive concrete piers. In the basement of the latter will be found both the constant speed and variable speed shafts for operating the machine room equipment, each erected in a similar manner to the line shaft in the basement of the beater room. All beater room equipment, except the conveyors delivering cooked stock to the beater engines, is direct driven from the line shaft, the power to which is supplied by belt from a cross-compound condensing engine unit erected in the engine room.

A second engine unit installed in the engine room provides, through direct belt connection thereto, the power for the constant speed line shaft operating the machine room equipment. In addition there is installed in the engine room an alternating current generator direct connected to its driving engine, as well as a synchronous motor driven direct current dynamo, and a steam turbine driven direct current dynamo, together with a switchboard for controlling all of the electrical power distribution system and the lighting installation.

The engines driving the machine room equipment, as well as the alternating current generator, are of the cross-compound, non-condensing type, and all engines are of the Hooven-Owens-Rentschler Company's manufacture.

Electricity Also Used.

Electrical energy for the power distribution is supplied at a pressure of 440 volts, and a three-phase, twenty-five cycle system is employed. All lighting is accomplished on a direct current system at a pressure of 115 volts, the current being supplied by either or both of the direct current dynamos referred to above.

This switchboard was provided by the Westinghouse Electric and Manufacturing Company, and all other electrical apparatus and machinery was supplied by the General Electric Company.

The condenser and vacuum pump, operating in connection with the condensing engine, are located in the basement of the engine room, as are the mill supply pump, fire pumps, vacuum pumps for both the heating and drainage systems, together with much of the larger piping, as well as other apparatus of various types. The condenser equipment consists of a Wheeler admiralty type surface condenser and an Edwards air pump, all built by the Wheeler Condenser and Engineering Company.

The water supply is ample for all mill and fire purposes; that for the mill proper is provided by a high duty flywheel type pumping engine of the Laidlaw-Dunn-Gordon pattern, having a nominal capacity of 3,000,000 gallons a day, while for fire protection two Blake pattern fire pumps have been installed, each of suitable size to supply water to five streams under a pressure of 100 pounds.

Equipment of Boiler House.

In the boiler room are installed four Babcock & Wilcox Company's Sterling type water tube boilers, aggregating in capacity 1,404 boiler horse power, and each equipped with a Greer Engineering Company's traveling chain gate. The gases from all boilers are conducted through a common breeching to a single brick chimney 200 feet in height above the grade and having a flue 102 inches in diameter.

The boiler plant installation is equipped with automatic appliances for controlling the operation of the boiler feed pumps and the supply of water to the boilers, the speed of the chain gates and the operation of the main damper in the flue between the boilers and the chimney.

Coal storage, in overhead steel bunkers, has been provided, a continuous bucket conveyor system handling the coal into the elevated storage bunkers, as well as elevating the ashes from the ash pits under the boiler furnaces into overhead ash storage bins, from which delivery can be made direct to cars on the service track. All of the conveying equipment throughout the property was supplied by the Stephens-Adamson Manufacturing Company.

In the pump room is located the feed water heating and purifying equipment, which is of the Cochrane type, together with the boiler feed pumps, which were supplied by the Laidlaw-Dunn-Gordon Company.

(Continued on page 199.)

Byron Weston Company

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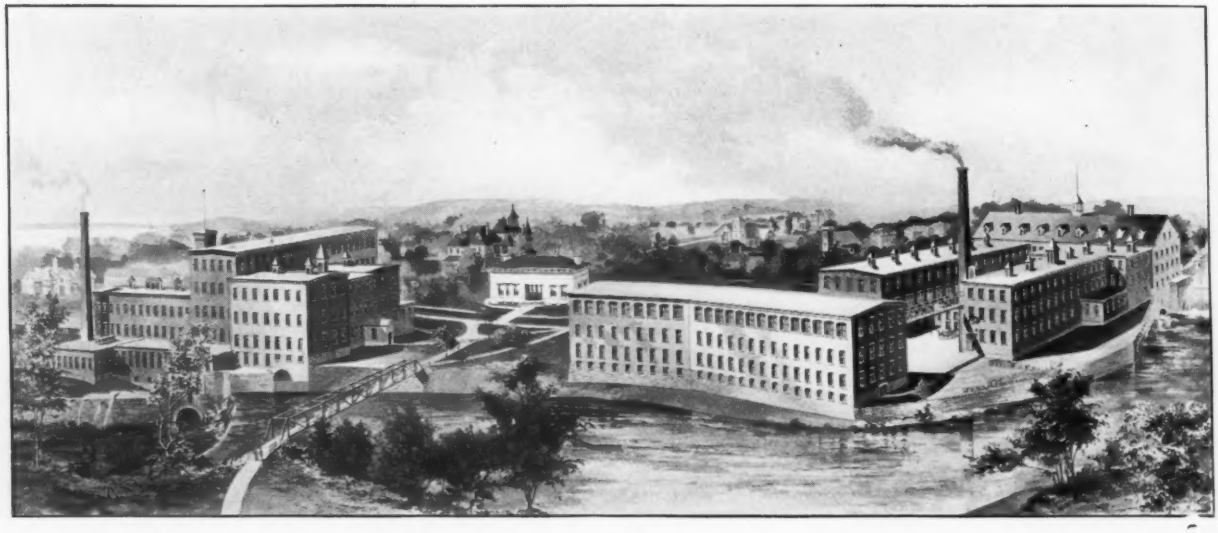

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The New River Raisin Paper Company.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, February 13, 1911.—The River Raisin Paper Company was organized in the summer of 1910 in Monroe, Mich., and practically all of the stock of the company is held in that enterprising little city. The success of the organization is largely due to the energy and ability displayed by G. H. Wood, vice president and treasurer, formerly a director and superintendent of the Boehme & Rauch Company, of Monroe, and J. F. Gray, of the Williams-Gray Company, Chicago.

Work was commenced on the plant very soon after the company was organized and the stock subscribed, and it is expected that the plant will be ready for operations early this month (February).

The building consists of a stock room, 140x72 feet; beater room and basement, 140x42 feet; machine room and basement, 350x36 feet; shipping room, 100x72 feet; shipping case department, 120x72 feet; boiler room, 50x44 feet; engine room, 50x75 feet and 20x60 feet.

The buildings are constructed of brick and reinforced concrete throughout.

The machinery consists of four 200 horse power high pressure boilers, two 300 horse power Hamilton-Corliss engines, one 75 horse power American Blower Company variable speed engine and a 50 kilowatt direct connected generator for lighting and furnishing power for the shipping case department. In the beater room there are six 1,500 pound Valley Iron Works beaters. In the machine room there is a 102 inch Black-Clawson five cylinder board machine, with sixty-seven dryers, and four Jordan engines. Located just ahead of the finishing end of the board machine is a 90 inch Black-Clawson pasting or combining machine. The container or shipping case department is equipped with the very latest machinery, which is direct connected to electric motors, for the manufacture of fibre shipping cases in the most economical way possible at the present time.

The cut accompanying this description shows the box department in course of construction. This portion of the works is a continuation of the main building.

The directors and officers of the company are: D. C. Jenkins, president, who is also at the head of the D. C. Jenkins Glass Company, Kokomo, Ind.; G. H. Wood, vice president and treasurer, formerly superintendent and a director of the Boehme & Bauch Company, Monroe; A. W. Stitt, Monroe, Mich., secretary, and the foregoing, together with J. F. Gray, of the Williams-Gray Company, Chicago, and Frank P. Walter, capitalist, of Monroe, Mich., are the directors.

THOMPSON.

GENERAL VIEW OF THE NEW MILL OF THE RIVER RAISIN PAPER COMPANY, MONROE, MICH.

AN IDEAL BOX BOARD MILL.

(Continued from page 197.)

ARTESIAN WELLS SUPPLY THE WATER.

The means for providing the water supply is an interesting feature in connection with the property. All water is secured from driven wells, and is elevated therefrom by a Harris air lift system into a reservoir whose walls are constructed of reinforced concrete. From this reservoir the water is conducted by gravity through a 36 inch main to a cistern located immediately outside of the engine room, from which it is distributed to the various departments by the pumping equipment previously described.

The sewerage question was another problem requiring considerable effort in properly solving. It has been necessary to construct approximately 3,000 feet of reinforced concrete, open sewer, in order to obtain the proper disposal of waste water, etc., from the property.

The electrical transmission system, which is installed entirely in a continuous sealed conduit system, is an interesting feature of the plant construction, and was installed by the Freeman-Sweet Company.

The entire piping equipment of the property was provided and installed by Woolen & Gallon.

The executive officers of the corporation are: Crawford Fairbanks, president; Thomas Bauer, vice president; B. F. Failey, treasurer; F. D. Wilson, general manager. With the experience of these individuals as an additional backing, the success of this plant, modern and complete in every detail, is assured.

To Thomas Bauer great credit is due for the able manner in which the plant has developed from a vacant piece of ground to a complete straw and combination board mill.

R. E. Adams was the resident manager in charge of the construction.

C. A. Chapman, Inc., Engineers, 39 Jackson boulevard, Chicago, were the designing and consulting engineers, under whose plans and specifications the construction and equipment was carried forward.

The Improved Warren Patent Double Drum Winder

The Ticonderoga Machine Works, of Ticonderoga, N. Y., are very busy building paper mill machinery and have recently made shipments of the "Improved Warren" patent double drum winders to the Taggart Brothers Company, Watertown, N. Y., and to the St. Lawrence Paper Mills, Ltd., Mille Roches, Ont., Canada, and to other paper mills.

Large winders are also being constructed by the St. George Pulp and Paper Company, of Norwalk, Conn., and for the Willamette Pulp and Paper Company, of Oregon City, Ore.

Up to the present time the machine works have manufactured over twenty of these "Improved Winders," all of which are giving gratifying results.

A recent patent dated December 20, 1910, covers many new valuable featudes of the "Improved Warren" patent double drum winder, the Ticonderoga Machine Works having the sole right to manufacture the same.

Norwegian paper machine manufacturers are evidently making efforts to extend their foreign trade. According to Farmand, a leading Christiania firm is now delivering a complete wood grinding equipment to British Columbia. The depressed state of the Norwegian ground wood and pulp trades is said to have rendered the machine builders of that country doubly anxious to cultivate export business.

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Vice-President

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WATERVLIET AGAIN MAKES PAPER

A New Company Has Re-equipped the Old Sims & Dudley Plant, and Is Now Operating an Up to Date Mill—Personnel of the Company—A Description of Mill and Machinery

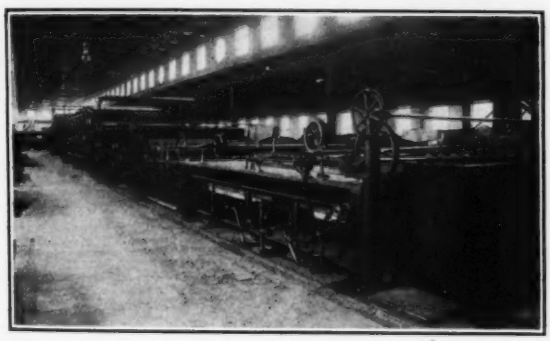
(Written for the Convention Number of THE PAPER TRADE JOURNAL.)

KALAMAZOO, MICH., February 3, 1911.—The Watervliet Paper Company, an important addition to many large paper mills located in southwestern Michigan, turned out its first product December 24, 1910, and is now running smoothly with every prospect of success in every way.

The new mill, while controlled by Kalamazoo capital, is located at Watervliet about 35 miles west of this city, near the banks of the beautiful Paw Paw lake. The company controlling the property was organized early in the past year by Charles B. Hays, and has a capital of $250,000, all paid in, with the following officers and directors: President and general manager, Walter S. Hodges; vice-president, August B. Scheid; secretary, Charles B. Hays; treasurer, W. R. Beebe; directors, Frank B. Lay, August B. Scheid, Charles B. Hays, Noah Bryant, James B. Balch, W. R. Beebe, all of Kalamazoo, and Walter S. Hodges, George Lockway and Warner M. Baldwin of Watervliet.

THE OLD SIMS AND DUDLEY MILL.

The company purchased the mill originally erected in Watervliet in 1892 by Sims & Dudley. Mr. Sims was a product of Holyoke,



WET END OF MACHINE—WATERVLIET PAPER COMPANY.

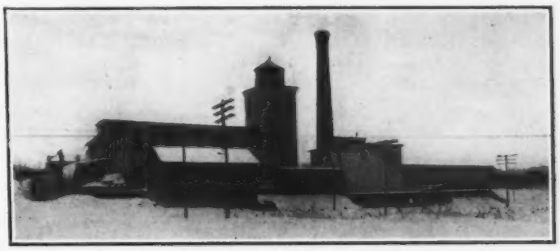
Mass., and came west to start in the paper making business. The Watervliet mill was built and equipped under his direct supervision and at the same time was considered a model institution. None but the finest material was used in the construction of the buildings, easily demonstrated by the fact that the building is to-day in practically perfect condition, being made so by means of comparatively few repairs and alterations.

Sims & Dudley manufactured writing paper and when the American Paper Company was organized that concern took over the plant and operated it for some time, but it was later shut down and partially dismantled, much of the machinery being shipped to the Wisconsin mills of the purchasing corporation.

With the acquisition of the mill by the present owners, Dan J. Albertson, architect and engineer, began the work of making the necessary repairs. He found the woodwork in a remarkable state of preservation. Heavy white oak, butternut and white pine had been used throughout and were only replaced because the new owners decided to install reinforced concrete floors in several portions of the immense structure. It was also necessary to change several of the partitions to conform to the needs of the new equipment, as well as add considerably to the power and boiler houses.

CONSTRUCTION AND EQUIPMENT OF THE MILL.

The mill is 436 by 108 feet in dimensions, two and three stories in height. The machine room is 325 feet long by 108 feet wide and is equipped with a 136-inch Fourdrinier machine, made by J. H. Horne & Sons Company, Lawrence, Mass. The machine has twenty-three 48-inch and two 28-inch dryers, ajustable wet part to raise and lower the wet end, two stacks of calenders, reels, etc. A double drum winder is attached, being the product of the Beloit Iron Works, Beloit, Wis. Three stacks of supercalenders, respectively 64, 54 and 46 inches in width are the product of the Norwood Engineering Company, Florence, Mass. One 84 inch

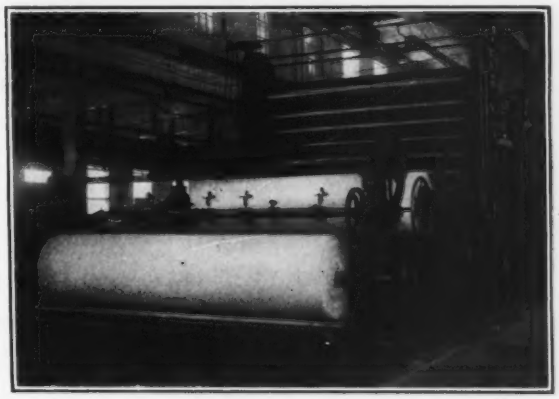


PLANT OF WATERVLIET PAPER COMPANY.

press cutter from the Smith & Winchester Company, South Windham, Conn.; also an 80 inch slitter and rewinder made by the Kidder Press Company, Dover, N. H. are in this room. The room is light and airy and there is ample room for the installation of the second machine, which will likely be made in the near future.

The beater room, 89 by 124 feet in size, contains four 2,000 pound beaters, made by the Holyoke Machine Company, also two J. H. Horne & Sons Company's Monarch Jordans. The washer room, 88 by 92 feet, contains three washers of a new type, also a chloride of lime measuring and storage tank. The rotaory room is 30 by 87 feet and is equipped with two rotary machines built by the McNeil Boiler Works, Akron, Ohio. A sorting room, 88 by 92 feet, contains a railroad duster made by the Norwood Engineering Company. There is also a dusting room, 30 by 87 feet and a rag dusting room, 20 by 32 feet in dimensions.

The power equipment of the mill is adequate for its needs. The engine room is 44.5 by 71 feet in size and contains a 300 horse power Lane & Bodley engine made by the Lane & Bodley Com-



DRY END OF MACHINE—WATERVLIET PAPER COMPANY.

pany, Cincinnati, Ohio, and a small Jewel engine, to be used on special occasions. One 150 k.w. and one 250 k.w. generator, furnished by the Allis-Chalmers Company, Milwaukee, and a West-

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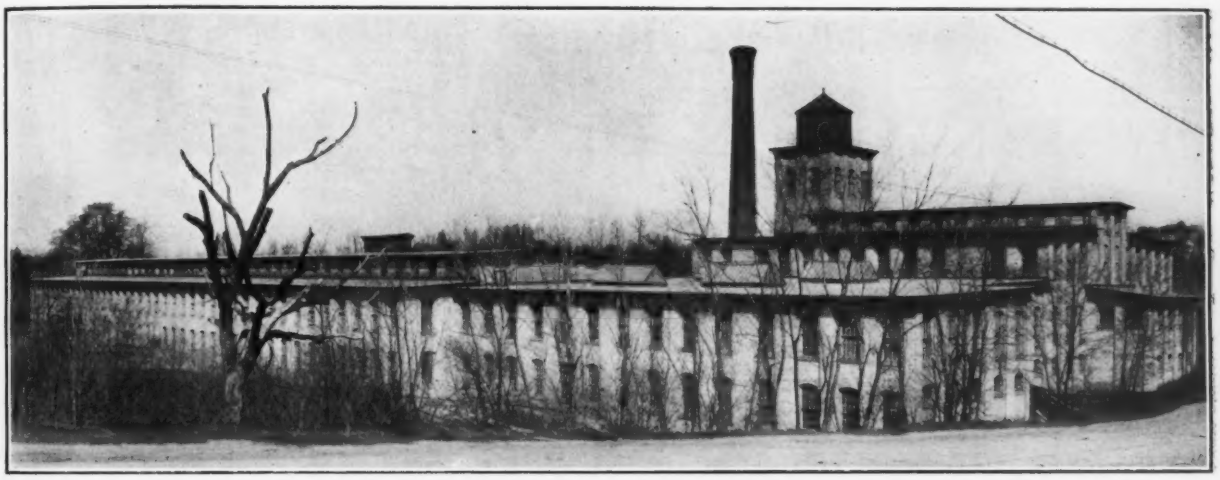
inghouse switchboard, also a power pump from the plant of the Sandusky Foundry & Machine Company, are in this room. In the basement under the machine room, is a 100 horse power Buckeye engine and a 100 horse power variable speed motor, for the line shaft and machine propulsion, also a 175 horse power motor for driving the supercalenders, cutters, etc.

Good water is furnished by the Paw Paw river, the minimum being placed at 500 horse power, which through the medium of two water wheels operates the beaters and Jordans.

The boiler room is equipped with three 200 horse power vertical water tube boilers, made by the Wickes Boiler Company, Saginaw, Mich. The stokers are made by the Detroit Stoker Company. A storage of fifteen cars of coal is allowed on the elevated racks.

All of the stuff chests of the mill are of reinforced concrete, while



ANOTHER VIEW OF THE MILL OF THE WATERVLIET PAPER COMPANY, WATERVLIET, MICH.

a modern sprinkling system connected to a 30,000 gallon tank and an underwriters' pump furnish adequate fire protection. A complete machine shop is also in connection with the plant.

WALTER S. HODGES IS PRESIDENT.

Walter S. Hodges, president of the company, is well known in paper trade circles, having been connected for many years with the Kalamazoo Paper Company, Bardeen Paper Company, Bryant Paper Company, and the Superior Paper Company, being president of the latter named concern. He is well suited for his present responsible position.

George Lockway, superintendent, has had a wide experience in making paper, having held similar positions with the Bryant Paper Company, Kalamazoo; Ohio Paper Company, Miamisburg, Ohio; and the Munsing Paper Company, Munsing, Mich.

HOWARD P. HALL.

Cottonseed Hull Fibre

In answer to our inquiry for a report of any new developments in regard to his cottonseed hull defibrating machine, Ed. C. de Segundo writes us from London, England, concerning the affairs of the American Cotton Hull and Fibre Company, of which he is the leading spirit:

"Editor Paper Trade Journal:

"DEAR SIR—I am much obliged to you for your letter of the 23d of December last, and must ask you to accept my apologies for this tardy reply.

"We have made very rapid and satisfactory progress in connection with the extension of the market for our fibre, and, indeed, in the autumn of last year we received a standing order for the unbleached fibre from one of the foremost paper making firms in France, which absorbs the whole of our present output at the Marseilles plant.

"We have concluded arrangements with a cotton oil company for co-operative working in the United States, and the first instalment of the plant is now in operation, and giving every satisfaction. We have commenced shipments of fibre to Europe, but the demand has so far outstripped the capacity of our two plants that we are now making arrangements for the erection and operation of further machines in the United States in order to take full advantage of the hulls to be produced during the forthcoming crushing season. Subsisting contracts, and contracts which could at once be entered into, would immediately absorb the whole of the fibre produced by the extra plant contemplated, and it is not impossible that we may find it necessary to still further increase the number of machines to be in operation by next August or September.

"The results of the operation of our plant in the United States show that the figures upon which our calculations were based are conservative, and bulk samples of the products which I have received here are fully up to my best expectations.

"You are quite at liberty to publish any of the above notes if you think it would be of interest to your readers, and I hope in a month or six weeks' time to be able to send you further particulars of an interesting character.

"I thank you for your good wishes, which I heartily reciprocate and trust you may have a very prosperous year.

"Yours very truly,

(Signed) "ED. C. DE SEGUNDO."

"LONDON, England, February 1, 1911."

Old Danish Paper Mills

A recently published Danish summary contains the history of about a thousand concerns in that country established more than fifty years and still in existence, including various paper firms.

The first Danish paper mill was the "Strandmöllen" factory, at Oeresund, near Copenhagen, which dates from the close of the sixteenth century. In 1693 Johan Drewsen, a native of Hanover, became its director, subsequently acquiring the ownership. The mill remained in the hands of the Drewsen family till 1889, when it was acquired by the paper combination, which closed it down in 1898.

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WOOD SUPPLY PROBLEM

Use of Additional Kinds and Mill and Lumber Waste Will Solve It

Tests Being Made Will Add to Available Supply—Woods of the Far West and South Will Force an Extension of the Industry—A Closer Affiliation With the Lumber Business

By William L. Hall, Assistant Forester, United States Forest Service.

(Written for the Convention Number of The Paper Trade Journal.)

In 1900 the consumption of wood for pulp amounted to 1,986,310 cords; in 1910 it was 4,002,000 cords.* The increase of 101 per cent. is large, but not surprising in view of the greatly augmented demand for pulp and paper products. In considering whether the pulp wood supply of the future will be ample, it is important first to inquire what the demand is likely to be.

The writer would be slow to fix upon any estimate as representing definitely the future demand for this product. It is, of course, impossible to tell what the demand may be. Judging from the variety of uses now made of pulp and paper and the rapid increase in output which has taken place during the past ten years, it is perhaps to be expected that the rate of increase will continue high for many years to come. In order to have some figure upon which to base a calculation, certain increases may be assumed as representing a reasonable growth between now and 1950. This the writer has attempted to do. If the rate of increase is not more than the percentages indicated below, then there will be better justification for the conclusions which are reached in the latter part of this article. Should the rate of increase here assumed be exceeded, the conclusions will accordingly be vitiated.

Estimated Pulp Wood Increase.

Year.	Per Cent. Increase.	Cords.
1900	...	1,986,000
1910	101†	4,002,000
1920	75	7,000,000
1930	50	10,500,000
1940	25	13,125,000
1950	25	16,400,000

† The actual increase.

In the figures here presented the assumed requirement for 1950 is more than 16,000,000 cords, or approximately four times the present requirements. This would be a slightly greater increase than has taken place in lumber production in the past forty years, which has been about 350 per cent.

To what extent will the supply suffice for the demand here assumed? In the inquiry to be made into this subject foreign sources of supply will be entirely disregarded. The inquiry will be directed only to the point of gathering information on how far domestic sources may be counted upon to meet the demand, which it is assumed will come.

The reader should recognize at the outset that most of the elements that enter into this calculation are indefinite. As we do not know what the demand will be, neither do we know what the supply will be, because we do not know what woods may be counted upon to produce pulp, and if we did, we do not know their present quantity or their growth possibilities. Whatever of conclusions we are able to reach upon the question must therefore be upon the basis of general information as to the supply and growth of timber and upon the present tendencies as to what classes of woods and materials may be employed.

* The figures given for 1900 and 1910 are in reality the figures on the production of 1899 and 1909.

Principal Woods Show Decline.

In 1909 spruce, hemlock and poplar composed 82.5 per cent. of the total quantity of pulp wood. In 1907 the same sources supplied 91 per cent. This is an important fact which it is worth while carefully to consider. As will be seen by reference to the table given below, domestic spruce furnished 1,653,000 cords in 1909, 1,487,000 in 1908 and 1,795,000 in 1907. Imported spruce furnished 768,000 cords in 1909, 672,000 in 1908 and 906,000 in 1907. Hemlock furnished 560,000 cords in 1909, 569,000 in 1908 and 576,000 in 1907. Domestic poplar furnished 303,000 cords in 1909, 280,000 in 1908 and 352,000 in 1907. The year 1908 sustained the effects of the financial depression which began in the fall of 1907, and the cut of all woods was low for that year, but in 1909 production came back to and slightly exceeded the figures of 1907. Comparing the two years it is found that on every one of these items which furnished the bulk of the pulp wood supply there was a decrease which, for all of them, amounted to 339,000 cords.* Since the total pulp wood consumption in 1909 was slightly more than in 1907, and all of the leading woods which composed it show decreases, the assumption must be that some other woods or materials became more available, or else that the supply of these woods became more difficult to obtain. Probably both causes are to some extent responsible for the change.

Consumption of Cordwood.

Kind of Wood.	Quantity in Cords. 1909.	1908.	1907.
Total	4,002,000	3,347,000	3,963,000
Spruce, domestic	1,653,000	1,487,000	1,795,000
Spruce, imported	768,000	672,000	906,000
Hemlock	560,000	569,000	576,000
Poplar, domestic	303,000	280,000	352,000
Poplar, imported	26,000	23,000	20,000
Balsam	95,000	45,000	44,000
Pine	91,000	84,000	79,000
White fir	37,000	(1)	(1)
Cottonwood	37,000	46,000	66,000
All other	183,000	141,000	125,000
Slab wood, etc.	249,000	(2)	(2)

[1] Included in "all other."

[2] Included with other wood, by species.

If we turn to the supply of these three woods, so far as it is found in the United States, we find no indication of its being immediately near the point of exhaustion. In Circular 166 of the Forest Service, published in 1909, Mr. R. S. Kellogg estimates the total stand of Eastern spruce at 50,000,000,000 board feet, and of Eastern hemlock at 75,000,000,000 board feet. The supply of these woods is being drafted both for pulp and for lumber. To the 1,653,000 cords of spruce cut for pulp in 1909 we must add 1,700,000 thousand board feet for lumber.† Reducing cords to thousand board feet by multiplying by .534 and adding the amount for lumber we get a total annual consumption of 2,600,000 thousand board feet. If we compare this with the estimated stand of 50,000,000,000 board feet, we have an apparent supply of spruce at the present rate of production of less than twenty-five years. This calculation considers neither the growth of young timber, on the one hand, nor the increase in demand on the other. Considering hemlock, we find that to the 560,000 cords used for pulp wood in 1909 we must add 3,373,000 thousand board feet for lumber;† or reducing the cords to thousand feet, we have a total consumption of 3,670,000 thousand feet. Comparing this with the estimated

* The actual difference was less than half this much because the mill waste, which was mostly of these woods, was separated out in 1909, but not in 1907.

† Since the figures on the production of these woods for 1909 are not yet available, the figures for 1907 are here used. The figures for 1909 will probably not be greatly different.

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stand of 75,000,000,000 feet, we have an indicated supply of over twenty years at the present rate of cutting.

In view of these figures it is not difficult to believe that already it may be becoming more difficult to obtain the normal supply of these woods; that with continuing demand they will become more and more scarce, and that the proportion of the supply which they form will grow less; but that it is likely to be many years before the supply is entirely exhausted. Poplar includes both aspen and yellow poplar, and for neither of these have we an estimate of stand. They are as widely distributed as hemlock, though their quantity is probably less. Because they grow scatteringly over a large area, reproduce well and grow fast they will be hard trees to exhaust. The output may be expected to hold fairly steady or gradually diminish from this time. Probably for a long time they will continue to form part of the supply. Along with poplar we may also include cottonwood, which is cut in the East and North and on the Pacific Coast, but in decreasing quantities, as is shown by the figures. For the same reasons noted for poplar it is likely to continue to furnish a small part of the supply and may in the future be extensively planted for this very purpose.

HAMMERMILL PAPER COMPANY, ERIE, PA.—VIEW OF MILL AND LOG PILES.

THE TREND TOWARD NEW WOODS.

A close scrutiny of the table discloses a second pertinent fact. Several new woods have entered the list and achieved some prominence since 1907. Balsam, with an output of 44,000 cords in 1907, sprang up to 95,000 in 1909. Pine, with 79,000 cords in 1907, went to 91,000 in 1909. White fir, which was not even listed in 1907, furnished 37,000 cords in 1909.

These woods have not as yet assumed very large proportions in production; but their entrance and rapid increase is significant. It shows that they can be used for this purpose. That is one important point. Another point equally important is that they are fairly well distributed for the convenience of the pulp industry and that their supply is large. Balsam may be said to be coextensive with spruce, and though less abundant, it will considerably extend the pulp supply in the region where it occurs, for it may be logged and manufactured along with spruce. The pine which is used is undoubtedly of two or three species, including scrub pine of the East, loblolly pine of Virginia and North Carolina and jack pine of the Lake States. The supply of pine available for this purpose is large. It occurs in dense stands distributed locally through a very extensive region. Loblolly pine attains size for lumber in forty or fifty years, and is widely cut for that purpose. Scrub pine and jack pine are not esteemed for lumber on account of their small size. This makes them all the more available for pulp. White fir is found only in the West. Its contribution to the pulp supply thus far has been limited to the Pacific Coast. The stand of this fir is large in the northern Rocky Mountains, the Cascades and the Sierras, and scarcely any of it has been cut. On account of the abundance of other more valuable woods in the West for lumber there will be little demand on white fir for that purpose. The supply will all be available for pulp.

The bringing of these woods into the field materially adds to the pulp supply. How much we do not know, because we do not know what the stand of them is, nor how much of the stand will be required for lumber and other purposes. But we do know that they are abundant and that they make the pulp supply appear in a more favorable light than it would without them.

And their introduction leads to this inquiry: Are there not other woods just as available for pulp, the introduction of which would still further extend the available supply? Without any question there are a number of such woods. If we can use jack pine we can also use lodgepole pine, the fibre of which is known to be good and the stand of which is enormous. We can also use Englemann spruce and alpine fir, which occupy nearly the same range as lodgepole pine and white fir in the Rockies and the Cascade and Sierra mountains. If, as experience shows, we can use white fir, it is reasonable to believe that we may use other firs of the Western States—lowland firs, amabilis fir and noble fir, which occur in rather great abundance. Other woods might be mentioned, but enough have been cited to show the possibilities in this direction.

How are these hitherto unknown woods to be tested and how are manufacturers to learn of the qualities? In this connection we should consider the tests under way at the Forest Products Laboratory at Madison, Wis. The laboratory is equipped to make tests by the sulphite and soda processes, and the work is now going on. The programme includes tests on a semi-commercial

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scale, in the pulping and paper making qualities of the woods above mentioned, and others, such as longleaf pine, paper and yellow birch, Western hemlock and Douglas fir. Besides ascertaining the fibre qualities and yield, it is expected to determine the best cooking conditions and the methods of handling the product of each wood. Working in this way it is planned to test out four or five woods per year.

Tests by the chemical processes are not sufficient fully to meet the needs of the situation. As pointed out in the report of the Select Committee of the House of Representatives which investigated the pulp situation in 1908, the ground wood process is the cheapest known, and, furthermore, ground wood pulp forming, as it does, about 80 per cent. of the mixture in ordinary news print, enters in a very important way into pulp production. Nearly all ground wood pulp is manufactured from spruce. There is, however, the same evidence of turning to other woods in ground wood manufacture, as is indicated by the totals for all processes, as will be seen by a study of the census reports for 1907, 1908 and 1909.

With a view to extending the ground wood process to other woods, Congress in 1910 made a special appropriation for tests by this process. The Forest Service is conducting these tests at Wausau, Wis., in a plant designed for the purpose and with standard, commercial size equipment. The first runs are being made upon jack pine, but it is expected to extend the work to hemlock, birch and other woods. No doubt difficult problems are involved in the discovery of methods of grinding such woods in order to produce economically a satisfactory grade of pulp. If experiments can be continued thorugh as much as two or three years, however, there is good basis for the belief that the problems may be solved for at least several abundant and accessible woods. The work is now well started and tests are under way.

Trend Toward Sawmill Waste.

Reference to the foregoing table of pulp wood requirements indicates still another tendency which must be considered. The use of slab wood and other mill refuse in 1909 amounted to nearly 250,000 cords, or approximately one-sixteenth of the total requirement. In 1908 this class of raw material was used in slightly greater quantity, the amount reaching 257,000 cords. In 1907 the amount was only 193,000 cords. The increase since that year has therefore been rapid. Is it likely to continue?

The census report for 1908 shows that nearly all of this material was slab wood from the sawmills, though small quantities of shavings and sawdust entered in. Spruce and hemlock supplied most of this material, while the remainder was chiefly pine. What utilization there has been is therefore of a class of material of which an enormous supply exists. There will be no limit to the movement on account of supply. It is far in excess of all immediate requirements. Taking into consideration only spruce, hemlock and yellow pine, the total production of which in 1907 was 18,315,000 M. feet, and assuming one-fourth cord of available material to every thousand feet of lumber, we would have approximately 4,580,000 cords of vailable material. If conditions for the use of such material become favorable, it appears reasonable to believe that one-half cord of such material could be so utilized. That would give 9,160,000 cords, more than double the total pulp wood now required, and over one-half the assumed demand in 1950. But the three woods which afford the basis for this calculation furnish less than half the total production of lumber. If the mill waste of the remainder could be used in the same proportion, it would amount to more than 18,000,000 cords of available material.

As to the tendency of the immediate present to utilize sawmill waste, the trade journals give us later word than the census returns. The writer has learned through trade journals, correspondence and from other sources of several instances of large operations being undertaken during the year 1910 on the basis of this class of material. These cases of themselves should increase the quantity of material used by 25,000 to 30,000 cords per year, and probably they are not the only ones that exist. In some instances pulp mills have been built to take the waste of one or more large sawmills. In others contracts have been made with lumber companies for this class of material which will form only part of the supply of raw material, the rest being made up of timber cut for the purpose.

Clearly this movement is going far before it stops. In mill waste it has tapped a rich source of supply, which has not been demanded for any other purpose, and of which the cost is very low. The census report for 1908 gives the average cost of mill waste as $4.26, only about half the average cost of pulp cord wood.

Will the Supply Meet the Demand?

From the study of the figures representing consumption it appears that the domestic supply of woods now chiefly used is not sufficient to meet the demand or even any considerable part of it between now and 1950. With the requirements as they are to-day for lumber and pulp the supply of spruce, hemlock and poplar is rapidly dwindling. Possibly by protection of the forest from fire and improved methods of management these woods can be held to the production they now sustain. Even this much is questionable.

If we take into consideration the woods which have just begun to be used for pulp, but which have come rapidly into notice within the past three years, and especially if we go further and take into consideration other woods similar in properties to these new ones, we find that the supply is thereby increased enormously. The only question appears to be, can we use them? The best present indications afford us hope that we can. In that case we have a supply which may be depended upon to furnish a large part, perhaps all, of the assumed increase in demand. It certainly would be conservative to say that with this group of woods included in the supply, the present demand could be doubled without serious inroads being made upon the supply between now and the middle of the century.

If we go one step further and assume that our use of mill waste as a source of pulp supply is just beginning, and that eventually a large proportion of that waste of species such as spruce, hemlock and pine may come to be utilized for pulp, the addition thus formed will be a very large one. Unquestionably it would increase the supply to a point very much beyond the demand, which has been assumed as a reasonable one to expect, as this source alone could furnish annually from ten to twelve million cords of material simply from the waste which now goes unused.

The logical conclusion on the point of pulp wood supply therefore appears to be that if we can bring into use the woods which now give strong indications of suitability and also a good share of the waste material from the sawmills, the pulp supply will be upon an entirely satisfactory basis, even though we consider only domestic sources. With the successful outcome of these two movements the supply should be ample for the next forty years, and if, as now appears probable, the Government, the States and individual companies exert themselves to protect the forest from its enemies and encourage its growth, by that time the forest will have reached a higher state of productiveness than now prevails. The indications on the whole must be regarded as favorable. The final result, however, must rest wholly upon the favorable outcome of developments which are now merely begun.

Adaptation to New Conditions.

Should the pulp industry find its continued existence upon some such basis of supply as is herein indicated, it will perhaps mean no sudden change in the industry such as would be necessary if it had to turn abruptly to new sources of raw material. There will be necessary, of course, a gradual readjustment to new conditions which may readily come about with the growth of the industry from this time on. Such a readjustment will eventually cause material changes in the industry.

In the first place, it will mean an extension of the industry be-

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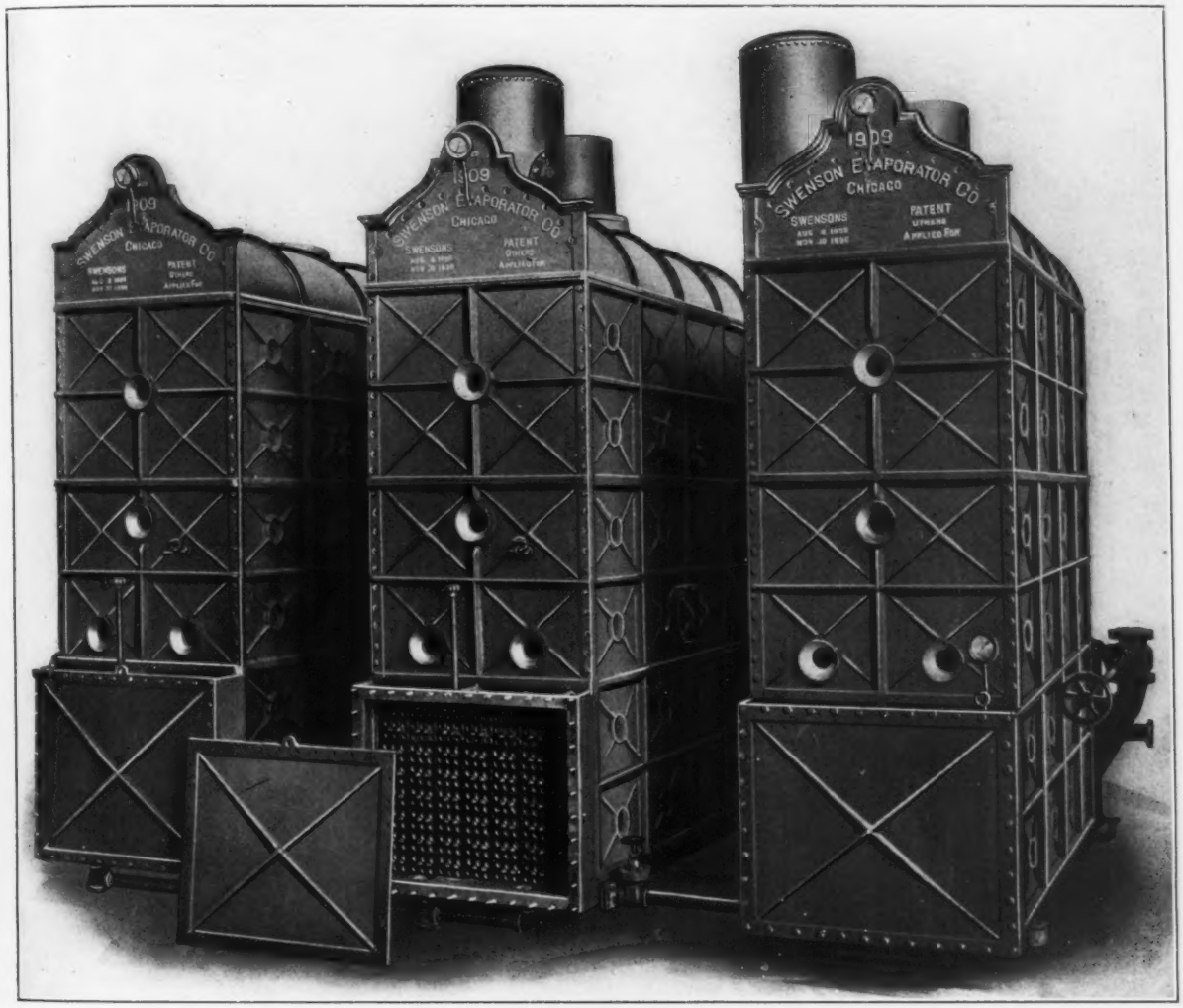
yond the region now chiefly occupied. Time was when the industry centred almost exclusively in New England and New York. Then a new centre appeared in Wisconsin, and more recently production has been growing rapidly on the Pacific Coast. If the new woods are to be utilized, as indicated in this article, the tendency to extend must go much further than it has. Much of the supply of the future must come from the northern Rockies and the Pacific Coast. Some of it must come from the South. Even now we find pulp mills located there. Doubtless they are only pioneers. Others will soon follow.

In the second place the readjustment will necessitate considerable change in the methods of manufacture. New woods will require new cooking and grinding processes. The utilization of mill waste will require these and other changes, such as improvement in barkers. Evidences exist already of rather rapid change in all of these matters.

In the third place, the assumed change in supply will inevitably mean a closer affiliation between the pulp industry and the lumber industry. Thus far they have been quite independent, each going to the woods for its raw material, pursuing its own course of manufacture and turning out its own product. From this time on we will undoubtedly see a knitting together of these two industries. Frequently we shall see pulp mills established in or near the lumber centres where they may depend upon sawmill waste for a portion of their raw material. The coalition of the two industries, it appears now, would generally be advantageous. It would mean the lessening of the waste of valuable material. It would mean a strengthening of the wood using industries by bringing together those which have hitherto worked separately, and it would mean the placing of the industries upon a permanent and scientific basis so that production might go on permanently, probably with decreased cost, with slight waste and with high efficiency.



SWENSON EVAPORATOR—TRIPLE EFFECT FOR BLACK LIQUOR FROM GUM WOOD—BUILT FOR GEORGIA PULP AND PAPER MANUFACTURING COMPANY.

Austrian Paper Production and Export

The total annual production of paper in Austria and Hungary amounts to 375,000 tons, with an aggregate value equal to $34,000,000. The exports of paper represent 60,000 tons, worth $5,500,000. The above figures do not include board and pulp. It has been stated that the Austrian paper product is chiefly of a staple character, proportionately less fine paper being made.

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Reclaiming in Soda Kraft Mills.

The accompanying illustrations show the type of apparatus in various of the newer pulp and Kraft mills for reclaiming alkali. in cases where expansion has been found necessary in the older mills, this general type of apparatus is now being used. The present recovery process represents a gradual development from the earlier, less scientific, methods and it boasts the merits of greater simplicity, economy and capacity. There are no patent royalties to charge to cost of installation or operation, and such economies as these now in use enable the manufacturer to make good profits in spite of the increased cost of labor and materials.

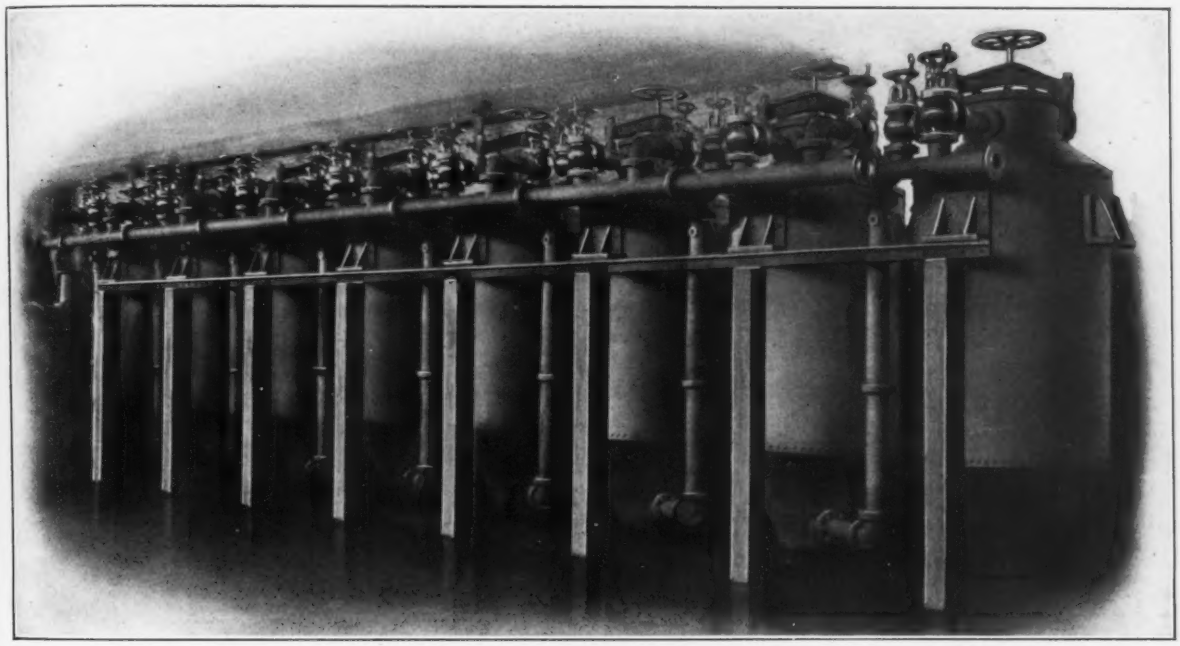
The evaporator shown is a type of the well-known Swenson evaporator. It is a modernized design of the original German sugar evaporators altered to make the pan adaptable to the handling of lyes and other liquors that foam greatly when boiling. The proportioning of the heating surface in these evaporators is such that with this system it has been found quite possible to operate the evaporator with exhaust steam from engines, pumps, etc., thus accomplishing two very desirable results—first: The evaporation by the use of steam which would otherwise be exhausted into the atmosphere; second—the reducing of back pressure on the exhaust parts of the engines by the slight vacuum that is frequently obtained in the heating tubes of the first body of the evaporator. It is common for those installing vacuum evaporating apparatus to overlook the fact that in evaporating large quantities of liquor, proportionately large quantities of steam must be furnished, as well as condensing water to aid in the maintenance of a high vacuum. The economy of the multiple effect evaporator increases with the number of effects. This economy is measured in terms of steam and condensing water. In practical operating it has been found, however, that the maximum economy in all mills of any size is obtained when using the quadruple effect. The triple effect shown in the photograph is capable of handling the black liquor in process in the ordinary twenty-ton soda pulp mill.

The material of which the main body of this apparatus is constructed is cast iron. It is built up of heavy cast iron plates which are thoroughly ribbed and internally braced against internal and external pressure. It has been found more advantageous to use cast iron in constructing evaporators, as the gradually increasing leaks through the calked joints of a steel plate receptacle lower the capacity and efficiency of the evaporator.

The arrangement of the heating surface is one of the more important factors in the success of this apparatus, it being necessary to arrange the heating surface in such a way that none of the ordinarily violent foaming produced in boiling the lyes should cause any loss of material by entrainment.

The Leaching Battery.

The leaching battery shown in the other cut has two functions in the reclaiming of soda, namely: to dissolve the black ash from the rotary furnace and to produce greater concentrated solution of carbonate of soda for which no filtration process is necessary and which can be produced in a sufficiently steady current that it can flow uninterrupted to the causticizing apparatus. By the proper arrangement of the valves, piping and conveying machinery, this apparatus is operated in a counter-current principle. The water or weak soda solution flowing into the apparatus comes in contact with the nearly exhausted black ash in the first cell of the series and the resulting strong carbonate of soda liquor delivered from the apparatus comes from the cell having the freshest and strongest black ash. The construction of this apparatus is such that it will stand the contact of both the solid material and the liquor without any wear and tear or depreciation. Neither filtration nor settling is necessary, as by this principle the material itself is its own filtering medium. It has been found that, by using this system of dissolving under pressure, that the resulting alkali cooking liquors passing through the reclaiming process carry a very much lower content of silica and alumina than is the case where the old process is used. Thus to a large extent has been avoided the scaling and consequent cleaning troubles in the evaporator. The apparatus is small, clean and self-contained and operates with the minimum attention.



Leaching Battery for Black Ash, Built by the Swenson Evaporator Company for the MacAndrews & Forbes Company, of Camden, N. J.

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THE WONDERLAND OF PAPER MAKING

The Record of the Kalamazoo District Reads Like a Fairy Tale —From Seven Mills, With Ten Machines, to Twenty-nine Mills, With Fifty Machines—and All This in Twenty Years!

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, MICH., February 13, 1911.—The development of the paper industry in western Michigan constitutes a most interesting chapter in the history of American industry. The growth during the past two decades has been remarkable. While in 1890 the territory radiating 50 miles either side of Kalamazoo contained seven small mills equipped with ten machines, that same section now has no less than 29 mills with 50 machines in full operation.

In 1890 there wasn't a single coating machine in operation in this section. When the enlargements now under way are completed within the next three months Southwestern Michigan will boast five up-to-date coating mills, equipped with 84 coaters.

While in 1890 the aggregate daily product of all the mills in this section of Michigan was only about 200,000 pounds, it now equals almost 2,000,000 pounds every 24 hours. This means 1,000 tons of paper each working day, or a total of over 300,000 tons a year.

The total number of employes in the mills is 3,700, while the coating mills employ about 600 more. Paper product concerns in Kalamazoo give employment to about 1,200.

An important feature of this industry is the fact that the mills in this section are modern and up-to-date, practically all of them having been installed within the last fifteen years. Speaking of this condition Dan J. Albertson, well known mill architect, said recently:

KALAMAZOO MILLS AS FINE AS ANY IN THE WORLD.

"The paper mills in and about Kalamazoo are as fine as any in the world. That is proved by the fact that the cost and equipment considered they produce more paper than any similar mills located anywhere else in the country. They are as a rule better dividend payers, because an effort has been made in the erection and equipment of these plants to include every contrivance and device that looks toward the economical running of the same after they are ready for operation. There has been no penny wise and pound foolish policy carried out in building new mills in this locality."

Kalamazoo is the center of this great industry and Kalamazoo capital controls a great majority of the paper and coating mills in operation in this section. In this city alone there are twelve paper mills, equipped with 25 machines, while four coating plants are operating 74 machines. Otsego boasts six mills with eight machines, also a modern coating plant, equipped with ten coaters. In Plainwell there are two mills of the Michigan Paper Company, with four machines. The Lee Paper Company, a two machine mill, is located at Vicksburg; the Michigan Box Board Company with one machine, is at White Pigeon; the Watervleit Paper Company, one machine, is at Watervleit; the Eddy Paper Company, one machine, is at Three Rivers.

Kalamazoo capital controls all the above concerns, also the Detroit Sulphite Fibre Company at Detroit, Mich., and the St. Lawrence Paper Mills Company, at Mille Roche, Canada.

There are also two paper mills at Niles, Mich., and one each at Grand Rapids and Constantine, Mich., and Elkhart, Ind.

In 1890 the mills in this section consisted of the Kalamazoo Paper Company and the Botsford Paper Company at Kalamazoo, four machines in all; the Bardeen Paper Company, Otsego. two machines; Michigan Paper Company, Plainwell, one machine; French Paper Company, Three Rivers, one machine; Niles Board & Paper Company and the Ohio Paper Company, Niles, Mich., each one machine. Of these the old Kalamazoo and Michigan mills have been demolished, while the Botsford, Bardeen and French mills have been entirely rebuilt and brought up-to-date.

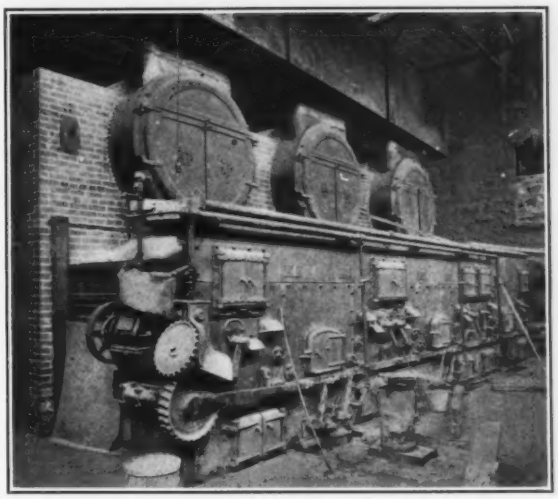
As a direct result of this immense growth in the manufacture of paper, there has also been a corresponding increase in the number of concerns that are devoted to the manufacture of paper products, Kalamazoo alone boasting fifteen such concerns of real importance in the industrial advancement of the community.

LAST YEAR A RECORD BREAKER IN MILL BUILDING.

In all the twenty years of advancement, 1910 holds the palm over any other similar period. During the last twelve months the growth has been truly remarkable. In this immediate vicinity approximately $3,000,000 have been invested in improvements, already accomplished or nearing completion.

The cost of improvements worthy of special note are:

KALAMAZOO:—Bryant Paper Company, Milham division, $1,000,000; Imperial Coating Mills, $75,000; King Paper Company, $700,000; Riverview Coated Paper Company, $75,000; Vegetable Parchment Company, $50,000; Sanitary Rag Company, $75,000; Kalamazoo Paper Box Company, $30,000; Kalamazoo Playing Card Company, $30,000; Johnson Paper Company, warehouse, $20,000.



BOILER ROOM IN THE "LYBSTER" MILL OF THE LINCOLN PAPER MILLS COMPANY, MERRITTON, ONT., CANADA.

WATERVLIET:—Watervliet Paper Company, $200,000.

PLAINWELL:—Michigan Paper Company, $400,000.

OTSEGO:—Babcock Tissue Paper Company, $100,000; Otsego Coated Paper Company, $75,000.

While a detailed description of the Bryant Paper Company's new Milham mill is described elsewhere in this journal, this concern is also making extensive enlargements on its Imperial Coating division. Two large buildings are now in course of erection and later twelve coaters from the John Waldron Company will be installed, as well as four stacks of supercalenders from the Norwood Engineering Company and considerable other machinery. Several hundred horse power in electric motors will also be installed, the power being generated in the power plant of the new Milham division.

A new roof has also been placed on the Superior division of the Bryant mills, while a concrete floor has been laid in the machine room at the wet end.

Early in the spring of 1910 the Riverview Coating mills completed the erction of three buildings, respectively 30 by 100, 48 by 150 and 88 by 100 feet in dimensions. Twelve coating machines were installed, also a large amount of auxiliary machinery, as well as additions to the power plant.

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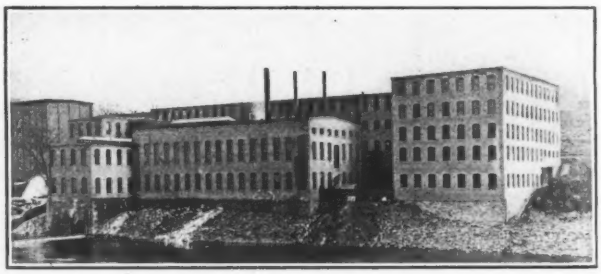

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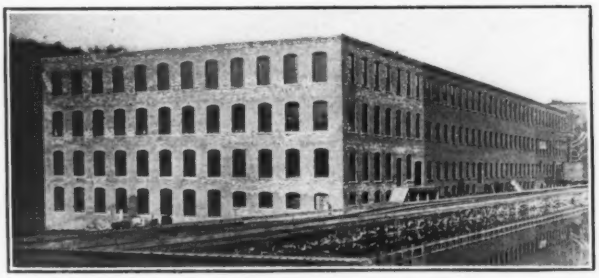

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PARSONS PULP AND LUMBER CO.'S MILL

This Company Is at Present Enlarging Its Paper Mill by the Construction of a New Building 154x258 Feet—F. C. Anderson, of Carthage, N. Y., Is the Engineer in Charge

The Parsons Pulp & Lumber Co. is preparing to enlarge the paper making department of its mill at Parsons, W. Va. The mill is now well equipped for the production of from 50 to 60 tons daily of bleached and unbleached sulphite pulp, having a power development of 1,750 boiler h.p., with natural gas for fuel. Owning as the company does a large tract of valuable timber land, it is but natural that it should desire a mill that is thoroughly modern and up to date in every respect. To accomplish this the company has secured the services of F. C. Anderson of Carthage, N. Y., an experienced paper and pulp maker, as designing engineer.

Description of the New Building.

The new building is to be 154 feet wide by 258 feet long, with basement under the machine and beater rooms, and constructed throughout of concrete and steel. The machine room is 64 by 255 feet, the beater room 83 by 112 feet, the finishing room 83 by 104 feet, inside dimensions. There will be a double track railroad entrance between the beater and finishing rooms with platforms 6 feet wide, thus giving good facilities for the handling and shipping of all materials and finished stock at a minimum labor and cost. This entrance is partitioned off from the beating and finishing rooms by large doors that are hung on weights and sliding up leaving a clear opening between piers 18 feet wide and 9 feet high. By referring to the ground plan, shown elsewhere in this issue, a better idea will be obtained of the general arrangement than can be had from reading a description of it. The basement floor is 16 feet below the main floor of the building, thus affording ample height for all chests, piping and machinery located in the basement and an easy access to the same without danger of accident because of cramped or shallow room. The basement under the machine room contains two large stock chests that are in connection with the 136 inch Fourdrinier machine that is to be installed, three small stock chests and three white water chests in connection with the 84 inch cylinder machine. Access to this basement is by three flights of stairs conveniently located in the machine room and a driveway from one end of the building. The basement under the beater room contains two large stock chests, one large and three small beater chests, and the white water chests for the large machine. These chests are so arranged that the dividing walls between them form solid foundations for the beating engines. The material to be used in the construction of the basement throughout will be reinforced concrete.

The main floor of the building is about 8 feet above the level of the ground, which gives ample opportunity for lighting the basement, a feature that is not always obtained in mill building. The direct cause of placing the floor so high above the ground was the obtaining of proper drainage. The mills are located on Shaffers' Fork of the Cheat river. This river, like all mountain streams is unreliable in its flow of water. A rise of from 5 feet to 8 feet caused by rain is a common occurrence, and as the banks of the river are not high enough to contain the water at all times, the question of drainage becomes a serious problem. The main drain runs the entire length of the building directly under the small machines. Into this empty all other drains necessary to take care of the water from the mill. There is a 30 inch water gate set in the main drain just inside of the wall where it passes out of the building, so in times of flood, this gate can be closed and prevent the water from the river backing up into the basement and causing a shutdown of the mill. During the time it is necessary to keep the valve closed, the drain empties into a large catch basin located at the side and just back of the valve, the water and drainage being pumped from the catch basin to the river with a centrifugal pump. With this arrangement it will not be necessary to shut the mill down because of high water unless it gets so high it runs into the windows.

The main floor of the building is calculated for a combined load of four hundred pounds per square foot, using rods for reinforcement. The walls of the building are reinforced concrete broken in 16 foot panels. The roof of the machine room is supported in the center by a 33 inch plate girder resting on columns spaced 32 feet on centers. The roof construction throughout is of concrete reinforced with wire. In addition to the roof load, these columns carry the crane runways. The trusses over the beater room in addition to supporting the roof will be heavy enough to carry one of the beater rolls suspended from trolley runways attached to the lower chords of the trusses. The beaters will be set in line, so that these runways will be directly over them, thus eliminating any lateral stress on the runway.

The machine room is provided with two traveling cranes with runways the entire length of the room. The crane over the large machine is of 8 tons capacity and that over the small machine of 6 tons capacity.

Provisions for Light in the Machine Room.

There is a large glass area in the side walls of the building. One of the principal objects in view in designing the building was to obtain plenty of light. In addition to the large glass area in the sides of the building, and partially for the purpose of giving more light, there are two skylights 12 feet wide running nearly the full length of the building over the center of each machine in the machine room. Two skylights 16 feet wide by 56 feet long over the finishing room, and two skylights 15 feet 8 inches wide by 60 feet long over the beater room. The skylights will all be of double construction with an 8 foot air space between the roof and ceiling lights, the roof lights will be glazed with heavy wire glass, and the ceiling lights with plain glass. Each skylight over the finishing and beater rooms is fitted with three 18 foot stationary ventilators. In the skylight over the large machine there are four 36 inch revolving ventilators and three 18 inch stationary ventilators, and in the skylight over the small machine there are three 38 inch revolving ventilators and three 18 inch stationary ventilators. In each of the revolving ventilators will be placed a 36 inch direct connected motor-driven fan. These large ventilators are so placed that the fans will exhaust the steam rising from the dryers of each of the machines. It is the intention of the engineer to have the heating and ventilating system as nearly perfect as is possible, and to do away with all moisture that may accumulate under the roof and so avoid dripping to the floor below.

Two Hot Air Heating Plants.

There are to be two separate hot air heating plants installed, one in the basement of the machine room and the other in the basement of the beater room. These will both be of the blast systems. The air from the apparatus in the basement of the machine room will be conducted up through the floor of the room along the side walls and by the sides of the columns in the center of the room to the under side of the roof at a temperature high enough to dry up any condensation that would naturally accumulate and form a drip. The distribution nozzles of the pipes will be spaced 8 feet apart the entire length of the room, and as there will be four rows of nozzles or outlets, two rows pointing toward each system of fans and ventilators it is believed by the engineer that there will be no trouble whatever from condensation and dripping, and that the expense and inconvenience of hoods over the machines will be overcome. The capacity of this apparatus and the fans is sufficient to make a complete change of the air in the machine room every eight minutes. The apparatus in the basement of the beater room will supply the hot air for both the beater and finishing rooms, the same system of piping and scheme of distribution being adhered to as is used in the machine room. The capacity of this apparatus is sufficient to completely change the air in both the beater and finishing rooms every fifteen minutes. In addition to the above,

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the two apparatuses will be so arranged that a complete change of air will be obtained in the basements every thirty minutes. Fresh air supply for this purpose will be taken from the outside. The fans connected with the heating apparatus will be engine-driven, using the exhaust steam from these engines to heat a portion of the coils in each of the heaters.

Machinery Motor-Driven.

All machinery through the mill will be motor driven, the only belting used being from the motors driving the beaters. This is imperative on account of liability of the beater rolls to jump. Each line of the beaters will be driven with a 225 h.p. motor located in the basement. Both paper machines and all pumps, agitators, etc., will be either direct connected or geared to electric motors, singly or in groups. The success of the electrical drive for paper machines has been so pronounced that the general manager of the mill, W. T. Robinson, would listen to no argument favoring the old style drive. It is the opinion of the engineer, that in this he is correct, for the motor not only eliminates all losses of power due to friction in the old drive, but they also do away with the first cost and maintainance of the same, and insure a more regular speed, consequently a more even weight and higher class product. And what is of greater importance than this, the liability to accident and personal injury caused by the ignorant, inexperienced and careless attempting to regulate and attend to the great amount of shafting, belting, &c., required in the Cone drive. Also the saving in room in the basement is worth considering. Motor-driven machines leave a clear basement for storage or whatever purpose is desired.

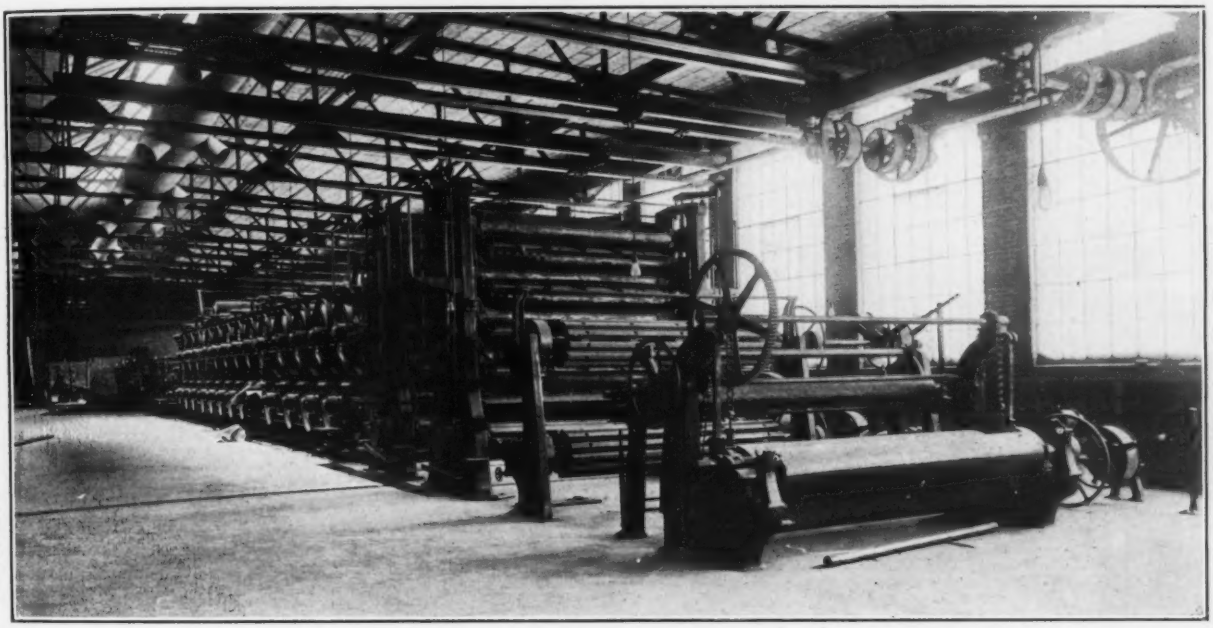
In one corner of the machine room will be seen three Standard and two Majestic Jordan engines. The former delivering stock to the chests of the cylinder machine and the latter to the chests on the opposite side of the building for the large Fourdrinier machine. Four inclined screens standing two in a row will supply stock for the large machine. The arrangement of the drive, stock supply, etc., are clearly shown on the plan.

Three screens are used to supply stock to the small machine. These are located close to the beater room wall. Each screen has its separate supply and discharge, no two screens discharging into the same cylinder box. The drive for these screens is in tandem so that but one motor is required.

Access to the basement of the beater room is by one flight of stairs and a hydraulic elevator of three tons capacity. The elevator is located near the railroad tracks thus avoiding long distance trucking. The present installation of eight 1,300 pound beaters leaves sufficient space in the beater room for four additional beaters, should the company decide at any time to increase the capacity of the mill.

The size cooker and chests are located in the basement of the beater room, in an apartment partitioned off for this purpose, and ventilated so the steam from the cooker will pass direct to the atmosphere.

The equipment of the finishing room has not been decided upon as yet so a description of it cannot be given. However, the floor area is large enough to accommodate the production of the mill.



View of the Machine Room of the Lincoln Paper Mills Company, Ltd., Merritton, Ont., Canada.

The Offices in Corner of Finishing Room.

The offices are partitioned off from one corner of the finishing room, occupying a space 32x42 feet. The partition walls will be of hollow tile, with furring tile on the outside walls, all plastered and plainly but neatly finished. The offices are so arranged that the manager has a large private office, the stenographer a room, and there is ample cloak room and toilet facilities for the women employed about the place. The vault and men's toilet are in the basement under half of the office space. Access to these apartments is by a stairway from the general office. The toilet will be modern and up to date with bath, shower, &c. The general office opens onto a large porch running along the front of the building the same distance the offices occupy.

It was the aim of the designer to make the building as plain as possible, and keep it pleasing to the eye.

According to a report of the Eastern Asiatic Swedish Commercial Attaché, Canadian pulp first reappeared in the Japanese statistics in 1909 as $493.

Herman Hoster, President **William B. Emerson, Secretary**

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LITHOGRAPHING

USING SULPHITE LYES

A Summary of Previous Efforts to Utilize This Form of Waste, Together With Abridged Reports of the Latest Researches —To Turn the Lyes to Profitable Account

By J. W. Burke.

(Translated and Abridged for the Convention Number.)

Prominent among the subjects which have recently engaged the attention of German chemists, is the utilization of the waste lye from sulphite mills, a question which has so far not been definitely solved.

Notable among recent articles on the subject in the German technical press are two in the Papier-Zeitung, respectively by Dr. Max Müller, President of the Society of Cellstuff and Paper Chemists, and by Dr. A. Stutzer, Professor at the University of Königsberg.

History of Previous Investigations.

The facts demonstrated at the Paris Exposition in 1867 grouped various results already obtained by Professor A. Mitscherlich and other experts. Specially noticeable among these was the process of Bachet and Machard for the obtaining from wood and straw of sugar and cellulose available for paper, through boiling in water, containing an admixture of one-tenth of muriatic acid. By this method, there was recovered sugar to the extent of about 22 per cent. from wood-shavings and about 25 per cent. from straw. The cellulose unaffected by the boiling produced a fibrous pulp suitable for felting and bleaching.

Sub-Products of Waste Lye.

It is of interest to note that in the early stages of ground wood manufacture, the recovery of alcohol was carried out by the same processes which have been followed in recent times. Prominent among these were:—the neutralization of the waste lyes by means of carbonate of lime, introduction of fermentation by the addition of yeast at 22-25° C., and subsequent distillation of the alcohol. Tilghman had called attention to the possibility of using sulphite waste lye for fertilizing purposes, his methods for that purpose being intelligent and practical. The recovery of glutinous and tanning substances was also contemplated in these earlier experiments.

Increased Difficulties with Waste Water.

With the rapid growth of the sulphite pulp manufacture in the early eighties, the difficulties attending the question of waste water became more prominent particularly with smaller water-courses. On November 20, 1887, Dr. Adolph Frank first explained the difficulties attending the utilization of waste lye, which were elaborated at a later date, before the Berlin Society of Industrial Development.

The two prize competitions of 1887 and 1890 were not more immediately resultful in the solution of the question at issue. At the same time the attention thus drawn to the subject encouraged research and investigation. In particular does the work in this direction of the years 1900-1910 show that the problem of the utilization of waste lyes is constantly enlarging its circle of interest. In the production of glutinous substances and tanning extracts, a definite stage would seem to have been attained by the results achieved.

Outlets for Recovered Substances.

Dr. Müller's remarks under this head are of special interest. He says:—

"In view of the limited outlets for the recovered products—attention has been again given to the transformation of the dissolved waste lye substances into sugar and alcohol, as well as to the production of fertilizers and of fodder. Thus the same problems are presented, as had to be met half a century ago at the birth of the cellstuff industry. Our more extensive knowledge on chemical and technical subjects, encourages the hope that the resumption of this work will be carried to a successful termination.

Removal of Water.

It is further remarked that in all processes for the utilization of waste lye, a point of primary importance is the removal of the water which contains the valuable organic substances it is desired to recover. The most diverse new methods of evaporation have been proposed, for the purpose of bringing the water into the form of extract or slime. Experiments for using the residue thus obtained as fuel or in the manufacture of briquettes, have hardly passed the experimental stage.

So far the history of the subject is ably dealt with by Dr. Müller, who has supplemented his general remarks with a list of the various discoveries and patents on record since 1860, under the following heads:—A., Alcohol; B., Treatment of Waste Lye; C., Binding agents; D., Fuel; E., Fertilizers; F., Dyestuffs; G., Filling substances for leather; H., Fodder; I., Tanning extracts; K., Glutinous substances; L., Special Paper Dyeing; M., Production of various special organic substances.

This comprehensive summary, forming part of a paper read at a recent board meeting of the Society of Cellstuff and Paper Chemists, is one of the most valuable contributions to recent technical literature affecting the pulp industry.

While Dr. Müller's paper thus chiefly deals with the history of waste lye utilization, that of Dr. Stutzer takes up the matter, rather from a theoretical point of view, dealing with the following aspects of the question:

Determination of Sulphurous Acid in Waste Lye.

In the analysis of waste lye, three groups of substances have to be distinguished:—combustible organic substances, ashy components, and sulphur combinations. Among the subdivisions are combinations of sulphurous acid with lignine (the so-called lignine-sulphonic acids), which contain the group SO_2 in a more firmly bound condition.

By the process hitherto in use the sulphurous acid is liberated by phosphoric acid, being transformed by oxidation after distillation, into sulphuric acid.

Dr. Stutzer, however, considers phosphoric acid too strong for that purpose, preferring the use of weaker agents, such a acetic acid, volatilized with water vapors. A series of comparative experiments with phosphoric and acetic acids is described, the results of which justify the preference expressed for the latter.

Removal of Sulphurous Acid From Waste Lye.

It is remarked that as long as sulphite cellstuff has been produced, there has been no scarcity of proposals for the profitable utilization of the waste lye. In most cases the primary object is to so far remove the sulphurous acid, that it can no longer injuriously affect the efficiency of the resulting products. This is, however, a matter of great difficulty, if it is desired to purify large quantities of waste lye. In contra-distinction to the recommendations of Frank and other authorities, Dr. Stutzer has expressed a preference for the use of formaldehyde in the removal of the sulphurous acid present. The adoption of this method is, however, impeded by the high price of formaldehyde, all efforts at its cheaper production having proved void of result. The use of milk of lime or soda-lye has the disadvantage of increasing the ashy components in the lye.

Various assumptions led Dr. Stutzer to try ammonia; one special reason being that a much smaller quantity is required to produce the alkaline reaction, compared with that of the other basic agents referred to.

Experiments described by him in detail confirmed his theory on the subject. He found, however, that by using carbonate of ammonia there remains in the fluid a larger quantity of sulphate of ammonia than by the ease of caustic ammonia.

Can the ammonia remaining in waste lye thus treated, be easily expelled by the addition of carbonate of calcium?

A part of the ammonia is volatilized and can be recovered; another part remaining in the waste lye in the form of salts. Under these circumstances the recovery of the ammonia by means of a

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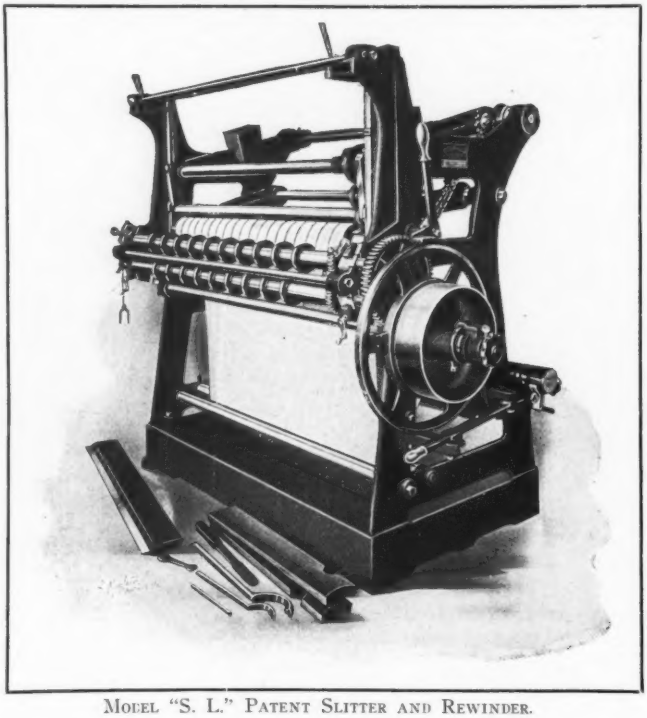
For Paper Box Makers



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weak basic agent, such as carbonate of calcium, would seem advisable.

How much sulphite of calcium can be extracted from waste lye through treatment with ammonia?

If an excess of ammonia is added to the hot lye, a part of the sulphurous acid is expelled in the form of calcium monosulphite. Dr. Stutzer's experiments were directed towards showing the maximum of sulphurous acid thus thrown off. He added to the acid waste lye, an excess precipitated carbonate of lime, then filtering the undissolved portion, and defining the quantity of sulphurous acid through the action of phosphoric acid. The results of these experiments showed that where caustic ammonia at 10 per cent. had been used a much larger quantity of sulphite of calcium was expelled. The proportion of SO_2 expelled by means of phosphoric acid represented 2.850 per cent. of waste lye, while with acetic acid the result showed only 1.930 per cent.

From these facts Dr. Stutzer draws the conclusion that by the addition of ammonia, a considerable part of the sulphurous acid present is expelled in combination with lime.

What is the best way of ruducing the proportion of salts of lime in waste lye?

The reduction of this proportion of lime is normally effected by means of acids and of basic agents. From various causes, however, the addition of sulphuric, oxalic and certain other acids does not produce the desired results. Better success would seem to have attended the employment of ammonia, in the reduction of the proportion of lime to a relatively small percentage. Under the influence of heat, the carbonic acid unites with the ammonia, until finally no more salts of lime are being expelled. After the complete dessication of the substance, the residue of sulphurous acid had either disappeared or was reduced to a small percentage.

In some cases the question arises whether the recovery of the ammonia is possible. Reserving the debated treatment of this question for a future occasion, Dr. Stutzer emphasizes the fact that through the action of carbonate of ammonia, the sulphurous acid can be so thoroughly expelled from the waste lye, that the latter may be regarded as being well purified.

Experiments in Use of Purified Waste Lye as Fodder.

It is remarked that when the waste lye is treated, as indicated, with carbonate of ammonia, there are no technical obstacles to the recovery of such portions of the ammonia as can be evaporated. Such is, however, not the case with the ammonium combinations remaining in the waste lye. It is added that it must be reserved for later investigation to determine in what degree the ammonia and the nitrogenous organic components can be utilized for purposes of feeding. Dr. Stutzer's preliminary researches dealt with the questions as to whether animals will consume extract of wood and as to whether such food is adapted for them. He considers that the results attained demonstrate that extract of wood is suitable for the purpose indicated, while its effective value in proportion to other feed is a point only to be decided by comprehensive expriments. Even if its nutritive properties are inferior to those of potatoes and molasses, an opportunity would be afforded for the profitable utilization of a certain proportion of the waste lye available.

Can Waste Lye Be Used for Purposes of Irrigation.

On this point, Dr. Stutzer expresses the opinion that the indiscriminate use of waste lye for the above purpose cannot be recommened. Each case of proposed use should be investigated on its own merits, special care being taken that no acids are present in the lye thus utilized.

Exact analytical determination of free acid in waste lye or other refuse waters.

In continuation of previous details, the methods are described by which free acid was determined in city sewer matter, in which sulphite waste lye was present.

Determination of viscosity of crude and concentrated waste lye.

In experiments with a view to converting waste lye into a viscous or dry mass, it was observed that the evaporation of the last residue of water was difficult; a cuticle being formed, which prevented the escape of the water in the form of vapor.

Tests with the viscometer indicate that the thickened waste lye is extremely viscous. The specific gravity of the lye was 1.056.

Alcohol in Sulphite Waste Lye

In recent issues of the Chemiker Zeitung Herr W. Kily dealt with the above subject, in part supplementing the technical indications of Prof. Dr. Schwalbe, and likewise discussing the commercial aspects of the question, with special reference to German factories.

The saccharine contents of the waste lye constitute a point of importance, Herr Kily having arrived at the same results as Bror Segerfelt, that from one ton, equal to 10 centimetres (353.10 cubic feet), of waste lye there can be obtained 60 litres (15.84 gallons) of 100 per cent. alcohol.

In Sweden the recovery of alcohol from waste lye has been assured as an industrial process. In such recovery (the waste lye costing nothing) the only elements to be considered are the expense of treatment and the excise duty. The latter is calculated on a basis eliminating the restrictions existing in Germany, so that there is an unimpeded development of the new alcohol industry.

As to the cost of recovering alcohol from sulphite, Herr Kily quotes the estimate of Bror Sagerfelt, to the effect that with a yearly product of 840,000 litres (221,760 gallons) of 100 per cent. alcohol, the cost per litre is about 9.5 oere (or 10 pfennige) per litre, equal to about 9 cents per gallon.

By Herr Kily's estimate a daily output of 60 tons of cellstuff should give at least 540,000 litres (142,560 gallons) of waste lye for purposes of fermenting or of producing alcohol.

It is remarked that although the consumption of denatured alcohol (which is the only form in which sulphite alcohol could be sold) is on the increase, it would be difficult without grave economic disadvantage to even partially supplant the potato spirit distillers and other manufacturers who have up to the present been supplying requirements.

The German daily production of cellstuff is estimated as 1,500 tons, corresponding to a daily quantity of 15,000,000 litres (3,960,000 gallons) of waste lye. It is stated that this represents 90,000 litres (23,760 gallons) daily product of 100 per cent. alcohol. This quantity would form from 6 to 7 per cent. of the aggregate German consumption of alcohol, but would all come under the head of denatured alcohol. It is added that the recovery of alcohol from sulphite may be regarded excluded as long as the present excise law remains in force, and as long as it has not been determined by experts that after its treatment for alcohol the waste lye can be safely conducted into streams.

With reference to Swedish progress in this matter it is added that the first Swedish mill to take it up was the Skutskär cellulose factory, which makes ethyl alcohol from sulphite lye by the Ekström patent process. By this process there were recovered in 1909 420,000 litres (110,880 gallons) of 50 per cent. alcohol. The Wallin patent is on a somewhat different principle, the production costing 4.1 oere per litre of alcohol, equal to about 4½ cents per gallon.

M. Gottesman & Son Open Holyoke Office

For the further accommodation of their New England mill friends, Messrs. M. Gottesman & Son, 154 Nassau street, New York, have opened a branch office for the sale of wood pulp at Holyoke, Mass., in charge of R. W. Allan, and located at 20 Howard steret, that city. Mr. Allan is well and favorably known in the New England paper trade, having been connected for many years with the American Writing Paper Company.

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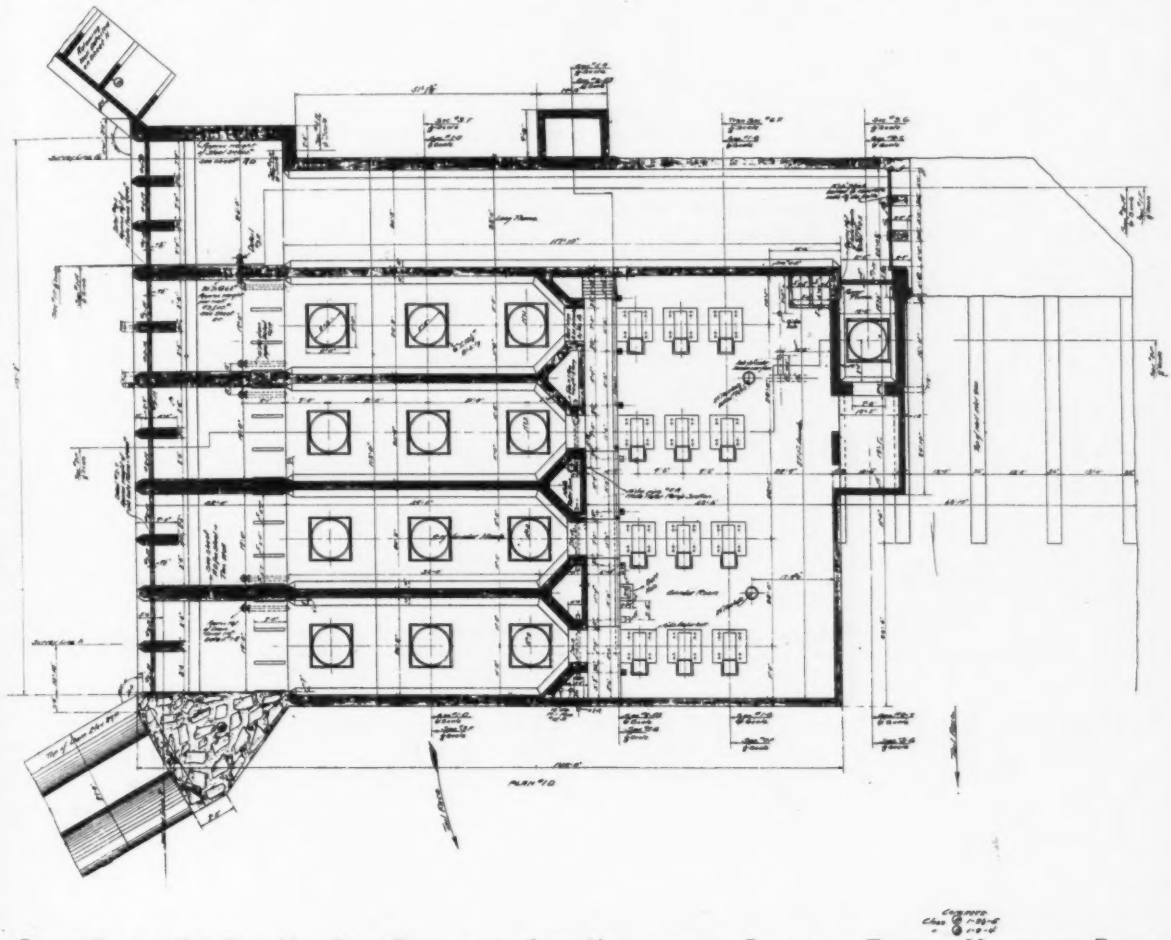
SOUTH HADLEY FALLS *MASSACHUSETTS*

The "Shredder" Fills a Gap Heretofore Unprovided For

The usual number of machines have been introduced during the past year in connection with the various processes incident to the modern manufacture of paper, and among these is the new Ryther "Shredder," which has awakened great interest among northern New York paper makers since its recent installation in various mills in that locality. This machine fills a gap between the crude stock and the refining engines, a step in the treatment of fibre which seems to have been somewhat neglected during the latter years of paper making.

The Ryther Shredder is designed, as is evident from its name, to shred or separate frozen laps, dry and hard stock and all raw materials of this nature before passing to the beaters, and the results obtained by mills using this machine are extremely gratifying. The Ryther Shredder has demonstrated the fact, long since suspected, that the beater has been misused, overburdened and obliged to perform preliminary work entirely foreign to its legitimate sphere as a mixing and refining engine, with a consequent expenditure of power and time out of all proportion to the results obtained. Enormous power and time have been expended in bringing various grades of raw material to the refining point, which should have been done by an entirely different process and with a machine built for and especially adapted to that purpose. The Ryther Shredder has accomplished this, and from results already obtained has proven to be a decided factor in the preparation of paper fibres and a wonderful power and time saver.

By way of comparison, the Shredder bears the same relation to the beaters in the manufacture of paper that the chipper bears to the digester in the manufacture of chemical fibre, and carries out the old and true theory of gradual reduction. The Ryther Shredder has a capacity of 100 tons, dry weight, of frozen ground wood per twenty-four hours, and requires to operate to capacity but about 25 horse power. It is simple in construction, durable in operation, and requires but a limited amount of floor space, and will prove a great boon to any paper mill required to use frozen, dry or hard stock of any description.



GROUND PLAN OF NEW PULP MILL BEING BUILT BY THE CABOT MANUFACTURING COMPANY AT TOPSHAM, ME., FOR THE PEJEPSCOT PAPER COMPANY—PLAN FURNISHED BY I. W. JONES, OF MILTON, N. H., ENGINEER AND DESIGNER OF WATER POWER PLANTS.

Diana Company Renews Sears, Roebuck Contract

WATERTOWN, N. Y., February 13, 1911.—The Diana Paper Company, with mills located at Harrisville, this State, has just renewed for a term of years its contract to furnish the entire output of the mill to Sears, Roebuck & Co., of Chicago. The Diana company has been furnishing this large mail order house for several years, the contract providing for 23 tons daily.

At a recent meeting of the company's directors Frank P. Wilder was elected manager and secretary; Mark S. Wilder was elected treasurer.

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SPANISH RIVER TO BE A BIG NEWS MILL

To Add a Paper Mill at Once and Increase Its Sulphite Output to Make 100 Tons of News Daily—Later to Extend Its Plant to Turn Out 200 Tons of News

The plant of the Spanish River Pulp and Paper Company, located at Espanola, near Webbwood, in the Province of Ontario, Canada, is to be considerably extended. The extensions proposed are:

First, a news paper plant of 100 tons capacity, with sufficient chemical pulp for its production; second, an extension of both news paper and chemical pulp plants so that the total capacity of the plant shall be 200 tons news paper per day. The plan of ultimate development gives a good idea of the extension as arranged. During the last five years the plant has been operated under the management of A. E. Millington as general manager. Its success is a rare tribute to his ability, and its future in the news paper field is very promising. The engineering work is being done by Joseph H. Wallace & Co., and it is along lines laid out in the original development. This is one of the rare cases where the ultimate development was thoroughly studied out at the time of the first installation.

The Proposed Paper and Chemical Fibre Plant.

While the first installation at Espanola was for the general hydraulic development and mechanical pulp plant only, the situation was studied with the future certainty of a production of 200 tons daily of news paper, with all the necessary mechanical and chemical pulps therefor, since the power and market possibilities warrant this capacity and the timber resources are in excess of these requirements. The work already constructed has been arranged so that these extensions may be made naturally and without stopping the present plant.

Five pairs of turbines are in operation, each having a capacity of 2,200 horse power net under 60 foot head. The plant is producing sufficient mechanical pulp to supply a news paper plant of 200 tons daily capacity, and has some possibilities of increased mechanical pulp tonnage. A sixth pair of turbines are provided for in the hydraulic work.

The ultimate scheme of development is for the following production: News paper, 200 tons daily; mechanical pulp, 170 tons daily; chemical fibre, 50 tons daily.

A few new news paper mills with better than average conditions have come into the markets of the Middle West of the United States during the period since this project was first outlined, but the increase of consumption has been tremendous, and the opportunities for well located plants for the manufacture of news paper on any considerable scale are limited, because of the factors of cheap wood and power and facilities of transportation to markets.

The mechanical pulp plant at Espanola, Ontario, has no superior today, and only in a few minor details can one suggest improvements. The three essential factors for economic production of ground wood pulp—wood, power and avilability to markets—are here combined to a remarkable advantage.

Natural Conditions Lowered Cost of Construction.

The cost of construction work is not a representative value for average plants of a similar character, since natural conditions aided materially in keeping these costs to a minimum. For instance, the canal is excavated partly from ledge, which forms the impregnable side toward the river, while the clay and sand required for all the brick and concrete construction, as well as all rock required for construction, were taken from this canal excavation.

The tailraces are protected by a natural breakwater below the falls, and thus are avoided the eddying and swirling of water from overflows on dam and canal relief gates.

The turbines are installed in pairs on horizontal shafts to offset all thrust; and are on solid concrete foundations running down to ledge. Bronze runners to turbines were of special design and material, whose operation has left nothing to be desired.

Sufficient timber for the demands of the proposed plant for a long period is vouched for by estimators and operators of experience. Pulp wood floatable to a uniform water power location and with good freight facilities and rates to markets is a very valuable asset and is very difficult to duplicate.

The Spanish River Pulp and Paper Mills, Ltd., was organized by men of standing, with experience of many years in lumbering in that section of Ontario for pine. They based their proposed operations on a thorough knowledge of the timber obtainable and the cost of handling it to the mill site.

The location commands a very favorable situation for water shipments to the vast territory reached via the Great Lakes,

Plant of the Appleton Coated Paper Company, Appleton, Wis.

either by barging on the river (a distance of 22 miles) or by rail to nearby lake ports.

Large Water Power Development.

The water power development up to 10,500 horse power net are complete and have been in operation about five years. Additional requirements of the proposed plant are provided for in the general hydraulic developments.

The watershed of the Spanish River and its tributaries extends from the Georgian Bay shores northerly to the Height of Land, and is one of the two largest areas whose waters enter Lake Huron on the north, covering 4,500 square miles.

The rainfall records up to the year 1900 showed that an average precipitation of 30 inches could be safely predicated, and this hypothesis was adopted in the developments.

The extension of the cross section of the canal and the installation of a sixth penstock and turbines for electrical generating station are progressive developments involving no risk of their outcome.

The dam is on rock foundations, and is arched in between two natural abutments, assuring its permanency; and the fall of water is over granite foundations. The dam raised the water so that it overflowed the flatlands, forming an ideal water storage and booming pond. The water was backed up stream a distance of over five miles, and the flow in this area is slow and regular, facilitating log handling during the open season and solid freezing during the winter, the latter the best preventive of "frazile" or anchor ice, the bane of the average power streams in the northern climate.

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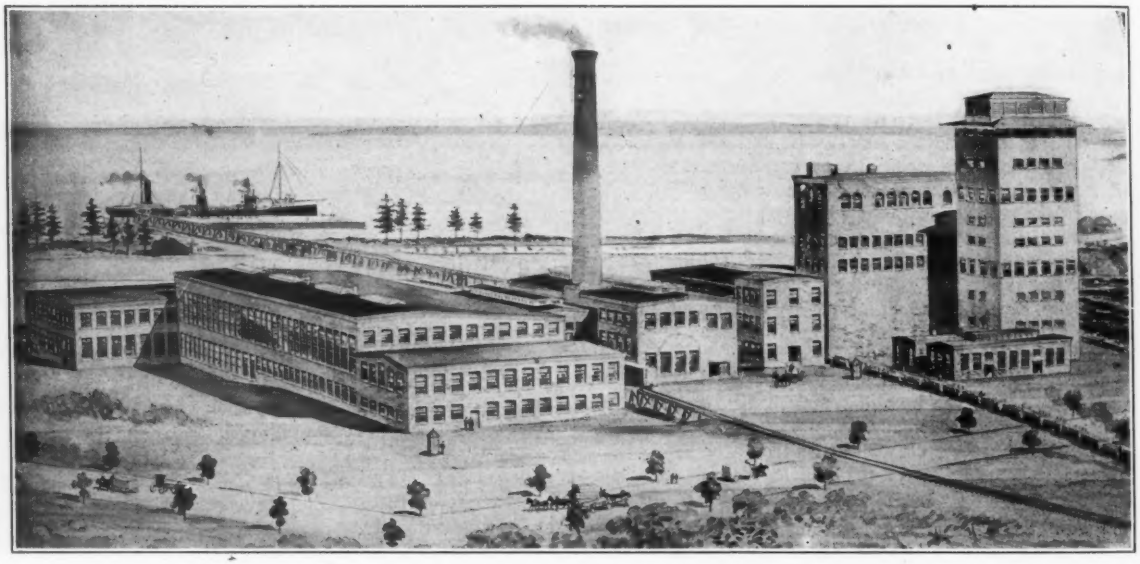

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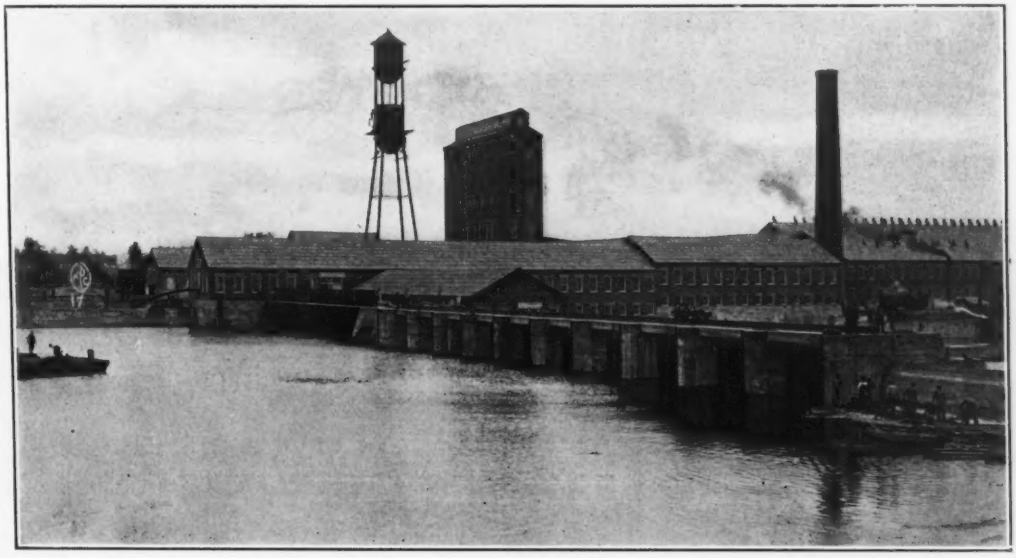
TESTING NEW WOODS FOR MECHANICAL

The Experimental Mill at Wausau, Wis., in Which the American Paper and Pulp Association Is Co-operating With the Government, Has Begun to Grind—New Material Promised

WASHINGTON, February 13, 1911.—Officials of the United States Department of Agriculture have received with satisfaction announcement from the experimental ground wood pulp mill which the department has been equipping at Wausau, Wis., in co-operation with the American Pulp and Paper Association, that the mill has begun to grind. The carrying on of the tests now announced as under way was provided for by a special appropriation, placed at the disposal of the Secretary of Agriculture by Congress last winter, to conduct tests of the suitability for paper making of plants and woods which seem likely to become valuable sources of supply of new material.

Secretary Wilson considered that the best use which could be made of this money would be to conduct experiments on a commercial scale, with various kinds of wood. Some of these have already been studied in the laboratory and found to be intrinsically siutable for pulp manufacture. Indeed, the Forest Service has actually made paper by one of the chemical processes from several of them. But in order to know whether they can profitably be utilized, under present conditions, it is necessary to test them under methods of manufacture comparable to those employed in actual business operations. In particular it is desired to find out to what extent new woods can be used for ground pulp, the cost of which is usually less than that of chemical pulp.



ANOTHER VIEW OF THE PLANT OF THE MARATHON PAPER MILLS COMPANY, OF ROTHSCHILD, WIS.

THE A. P. & P. A. CO-OPERATING WITH THE GOVERNMENT.

The Wausau Mill has been built especially for the use of the Government for as long as the experiments may require. Its inside dimensions are 40 by 100 feet, and it is equipped with electrical machinery and all necessary apparatus of the most up to date type. Part of the equipment is contributed by the American Pulp and Paper Association and part is furnished by the Government. The association will also furnish the wood for the tests. The wood now on hand includes carload lots of jack pine, spruce, hemlock and tamarack. The jack pine is to be the first wood tested.

While the experiments are intended to cover woods from all parts of the country which, from the standpoint of physical properties and available supplies, promise to furnish new material for the paper making industry, a special point will be made of tests of Western woods which are abundant in the National forests. There are enormous supplies of various soft woods in these forests for which there now exists little demand, and this fact constitutes one of the serious problems of management of the National forests. In order to have forests produce timber steadily they must be cut; but if there is a market only for timber from the most valuable kinds of trees the result of cutting is likely to be the disappearance of these trees and their replacement in the forest growth by species which are not in demand. Since the pulp mills take material too small for the lumber mills, species suitable for paper making can be cut to a low timber diameter, and thus the balance may be turned in favor of the reproduction of the more valuable kinds of trees.

In addition to the benefit which the public will derive from the advancement of forest conservation in consequence of the wood pulp experiments of the Government, there is the further benefit of cheaper paper, which it is believed these experiments should make possible. The price of paper of the cheaper grades, including news paper, has been advancing rapidly of recent years as the supply of spruce has dwindled, and American mills are now drawing a large part of their supply from Canada. If ground pulp of the requisite quality can be made from new and abundant woods as cheaply as it is made from spruce, one of the most serious problems of the newspaper publisher nowadays will or should be considerably simplified.

Mohegan Paper Company Increases Capital Stock

NORWICH, Conn., February 13, 1911.—The Mohegan Paper Company, doing busines at Quaker Hill, in the town of Palmertown, this State, has just filed a certificate with the Secretary of State at Hartford announcing an increase in its capital stock from $15,000 to $50,000. This is part of the property of the late Francis Robertson, of that place, and had been very much out of repair. Although the Mohegan Company had made alterations, the needs of their increasing business demanded further changes.

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Capacity of Mill:

150 TONS OF PAPER PER DAY - SULPHITE, 100 TONS - SODA, 125 TONS

Mills, RUMFORD FALLS, MAINE Correspondence Solicited

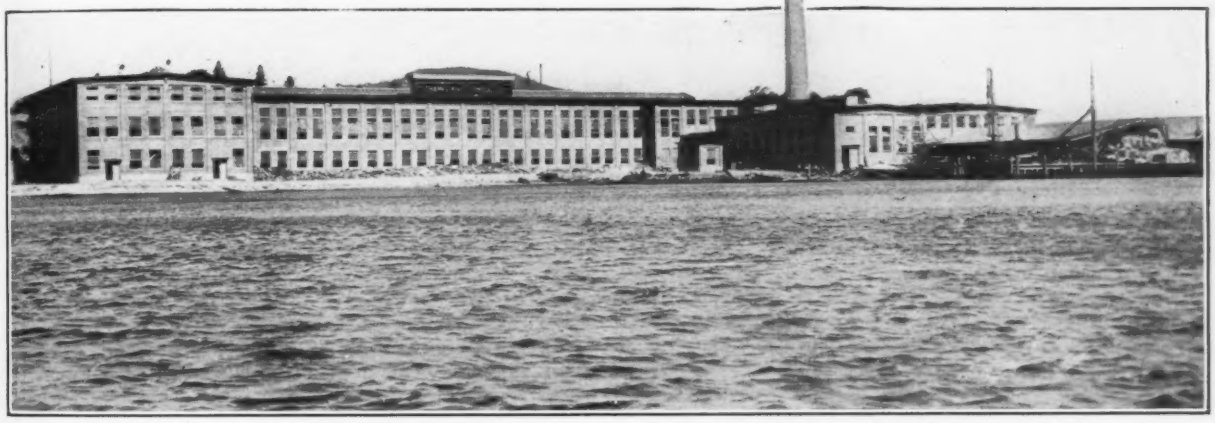
A BOARD SPECIALTY MILL

The Plant Built at Montville, Conn., Is Absolutely Up to Date

It Is a Two Machine Brick Structure and Rests on Concrete Piles Sunk in the River's Edge—Description of Its Construction and Equipment—Will Make Box Board Specialties

The new plant of the Thames River Specialties Company, located at Montville, Conn., is one of the mill products of the year that is worthy of special mention, as it represents the latest ideas in mill construction and equipment. Because of the peculiarities of the location selected, and the product to be made, the gentlemen interested in the new enterprise were confronted with numerous difficult problems, which necessitated special considerations. That they in turn successfully met the problems referred to is attested by the smoothness with which the mill has been running for the past few months.

The officers of this concern are Maunsell Van Renssalaer, president; Horatio Bigelow, vice president; David S. Greenough, Jr., treasurer; Albert F. Bigelow, secretary; A. J. Huggard, assistant to president, and R. P. Stevens, superintendent of manufacture.



THAMES RIVER SPECIALTIES COMPANY'S NEW MILL AT MONTVILLE, CONN.—VIEW FROM RIVER SIDE.

The chief factor of novelty in connection with this new mill is the fact that the buildings rest entirely on concrete piles, which are sunk in the river's edge. This location gives the company double shipping facilities, its raw material and finished product being shipped either by water up the Thames or by the Central Vermont Railroad lines, which run to the rear of the mill buildings.

THE BUILDING IS OF BRICK.

The plan of the company is a two machine board mill, with only one machine at present being installed. The buildings are of brick construction, the basement and main floors being of concrete. All the buildings are two stories in height, except the boiler and engine room, which are of one story, and the finishing room, which is three stories. On the upper floor of the latter there will be a factory equipment installed for the manufacture of specialties. The concrete piles upon which the mill rests were placed in position by the Raymond Concrete Pile Company, of New York.

The paper stock house in which the raw material is stored is 72x125 feet, the boiler house is 72x144 feet, and the machine room 78 and 100x306 feet; the finishing room is 72x145 feet, the boiler house 54x102 feet, and the engine room 34x54 feet.

There are six iron tub beaters, having 65 inch rolls and 54 inch face; also one "Majestic" Jordan and two "Standard" Jordans. The beaters and Jordans were furnished by the E. D. Jones & Sons Company, of Pittsfield, Mass.

The board machine was furnished complete by the Bagley & Sewall Company, of Watertown, N. Y. It consists of six cylinders of 134 inch face and 48 inches in diameter. It has six pairs of primary press rolls and three sets of main presses; it also has sixty-four 42 inch dryers. There are two stacks of calenders, having seven rolls each; three drum upright reels and a duplex cutter, and two three-shaft upright winders.

The variable speed transmission for the machine was furnished by the Moore & White Company, of Philadelphia. All the variable parts of the machinery and the constant parts, including the Jordans, are driven by separate constant speed engines of the Hamilton Corliss type, which are furnished by the Hooven, Owens, Rentschler Company, of Hamilton, Ohio. The machinery in the beater room is driven by a third engine of the Corliss type, furnished by the same company.

The boiler equipment consists of four 84 inch diameter horizontal tubular boilers, made by the D. M. Dillon Steam Boiler Works, Fitchburg, Mass. These boilers are equipped with Foster superheaters, furnished by the Power Specialty Company, of New York. The chimney is of the radial brick type, 175 feet high, and was constructed by the M. W. Kellogg Company, of New York. The electric power for lighting and for the repair and specialty shop is obtained from a turbo-generator set of 100 kw. capacity, which was furnished by the Westinghouse Machine Company, of Pittsburg, Pa. The induction motors, varying from 10 to 50 horse power, were furnished by the Allis-Chalmers Company, of Milwaukee, and all the electric construction work for motors and lights was done by the Lord Electric Company, of New York.

The board machine is equipped with six "Packer" open side screens, furnished by the Sandy Hill Iron and Brass Works.

There are two steam boiler feed pumps and one underwriter steam fire pump, all of which were furnished by the Deane Steam Pump Company.

The fire protection is in accordance with the rules of the Associated Factory Mutual Fire Insurance Companies.

The sprinkler and hydrant system was installed complete by the General Fire Extinguisher Company, of Providence, R. I. The sprinkler tank is located on the hillside across the railroad tracks and has a capacity of 50,000 gallons. It was made by the Chicago Bridge and Iron Works, of Chicago.

The machine room is equipped complete with overhead trolleys and hoists for removing the rolls from the machine. These were furnished by the Northern Engineering Works, of Detroit.

Bardeen Paper Company

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SOFT FELT
RAG WRAPPING
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And All Light Weight Catalogue and Bible Papers

Otsego Coated Paper Company

OTSEGO, MICHIGAN

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There are three elevators, two in the finishing room and one in the stock house. These elevators are of the steam hydraulic type, and were furnished by Craig Ridgway & Son Company, of Coatesville, Pa.

The power transmission machinery for the whole mill was furnished by the George V. Cresson Company.

The entire piping, including steam, stock and water transmission system, also the heating and pipe covering, were furnished by the Walworth Manufacturing Company, of Boston.

The water supply of the mill is furnished from a pond which is located at a distance of 3,000 feet from the mill. This pond was formed by building a dam 20 feet high on a little river that is known as the Oxoboxo Brook.

George F. Hardy, the well known New York mill architect and engineer, drew the plans for the mill and superintended its construction and equipment.

A Big New Pulp Mill at Murray Bay, P. Q.

The new ground wood mill of the East Canada Power & Pulp Company, Ltd., will be located at Nairns Falls, five miles from Murray Bay, P. Q., Canada, on the line of the Quebec & Saguenay Railroad. The hydraulic development will produce approximately 10,000 h.p. The dam to be erected is of the Ransom hollow type and the head will be 65 feet.

The pen stocks are to be erected by Walsh's Holyoke Boiler Works, the same firm which put in the pen stocks for the Anglo-Newfoundland plant at Grand Falls, N. S. The wheels are to be furnished by the S. Morgan Smith Company. Twelve grinders built by the Holyoke Machine Company will be installed in three lines, each line to have 2,400 h.p. The grinders will take wood 30 inches in length, and will have a capacity of eight to nine tons a day dry weight.

The wet-machines and save-alls are to be built by the Sherbrooke Machine Company, and the press outfit by the Canadian Boomer & Boschert Company.

Quiller & Stubbs' centrifugal screens are to be used, which will be manufactured by the Waterous Machine Company of Brantford, Ont., Canada. The machinery for the cutting-up mill will be built by the Ryther & Pringle Company of Carthage, N. Y., and the wood-room will be equipped with a combination of Green Bay (Wis.) barkers and Witham automatic barkers, with the Lombard & Baldwin attachments.

The railway from tide-water to the mill will be completed July 15th, 1911, and it is expected that the mill will be ready for operating by October 1st. The Bishop Construction Company of Montreal, has the general contract, and also the contract for the branch of the railroad.

The East Canada Power & Pulp Company has taken over the limits of the Murray Bay Lumber & Pulp Company, which contain a perpetual supply of spruce, and the property of the Labrador Power Company, which handles the franchises for furnishing light and power to the villages of Murray Bay, Point a Pic, Cap a l'Aigle and St. Irene.

The engineer in charge is George F. Hardy of New York City and the intention of the company is to erect a plant which will incorporate the most advanced Swedish and Canadian practises in the manufacture of ground wood.

The officers of the company are, President, Rodolphe Forget, of Montreal; Vice-President, Charles W. Tooke, of Syracuse; Secretary and Treasurer, L. C. Haskell, of Montreal.

The Sembritzski process for preserving white wood pulp has been engaging the official attention of the Association of German Wood Pulp Manufacturers. This process consists in packing or covering white wood pulp in or with brown wood pulp. An official request was lately made by Herr Eugen Kaul, president of the above named association.

New Roll News Mills in Hungary

The annual requirements of the Hungarian market in roll news are estimated at 1,500 carloads, of which only a small part is supplied by the one mill now in existence.

Notwithstanding the declared readiness of the Hungarian Government to support an organized attempt to remedy this situation, through the establishment by the makers of a joint news mill, this proposal fell through. The "First Hungarian Paper Company" has now expressed its willingness to install the manufacture of roll news at its Maszniko factory, with an equipment to cost the equivalent of $240,000. It is anticipated that the whole requirements of the Hungarian market will thus in the course of a few years be provided for. In consideration of the mill turning out at least one carload a day it will, as has been stated, receive a subsidy equaling $90,000, spread over ten years.

Spanish Paper Trade

According to a recent Swedish consular report, certain grades of Swedish paper have acquired a position in the Spanish market. Among these is the reddish "Sealing" quality, which is now permitted to be used on postal parcels, while formerly only paper with a woven lining was allowed for that purpose. The price of "Sealing" has, however, fallen, since Spanish mills have been producing an imitation.

Orders have been placed for kraft paper in natural color, not for use as wrapping paper, but as a foundation for glass and emery paper. The dark tone, however, does not please the Spanish trade, which calls for yellow, buff, blue and other relatively bright colors.

Business in thin paper made from sulphite pulp, as well as in ordinary heavier grades of the same, are under the disadvantage of an unfavorable customs classification, which restricts imports. The Swedish grades, intended for use in the manufacture of cops for spinning mills, are among the descriptions thus affected by the Spanish tariff.

The Norwegian consul at Barcelona reports the fact that owing to the strikes and disturbances of 1909 many Spanish manufacturers had to defer accepting delivery of pulp on contracts. Spain seems to be chiefly dependent upon imports of supplies of paper making materials.

Swedish Kraft Paper and German Consumers

In a recent number of the Papier-Zeitung, a correspondent, writing from a German consumer's point of view, remarks:

"Although German paper manufacturers have been trying hard to produce a kraft paper equal in strength to the Swedish article, full success has not attended their efforts. Consequently German dealers and consumers are obliged to largely use Swedish kraft, for which the Swedish mills are largely sold ahead, and in some cases refuse to quote.

"Swedish manufacturers are from year to year making more difficulties as to the acceptance of orders. Not only do they think they can put up prices in an exaggerated degree, but, above all, their limited desire to meet the wishes of buyers is very unpleasant; for instance, as to using the full widths of the machines, instruction as to making up, time of delivery, etc."

Commenting upon the above statements, another correspondent over the signature "Scandinavian" writes the above named journal from a different point of view, in the following terms:

"The difficulty of producing German paper equal in quality to Swedish kraft paper will cease if the proper manufacturing method is employed more than hitherto in German factories. Particular attention must be paid to the treatment of the cellstuff in the 'kollergang.'

"As Swedish 'kraft' is so much in demand abroad, most of the Swedish mills in that line art sold up. There is no need for the latter to accept the troublesome requirements of certain customers."

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USE OF BARKING DRUM SAVES MONEY

The Cost of Pulp Wood Is Being Reduced at Least 12 Per Cent. by the Use of the Bache-Wiig Drum—It Operates by Means of Water and Friction

(Written for the Convention Number of THE PAPER TRADE JOURNAL.)

In these days of severe competition pulp makers are keenly on the lookout for anything which will reduce their operating cost, and thus add to the small profit which is theirs. Of the many items which must bear this scrutiny none offers a greater chance for improvement than the pulp wood factor, for it is by far the most expensive material entering into the cost of producing pulp.

That this view is recognized by all far-sighted pulp manufacturers is attested by the tremendous amounts of money which they have put into timberlands for the purpose of insuring a continuous supply at as low a cost as possible, and the change in methods of cutting the timber. The more progress manufacturers are making in their economies the more careful their supervision of and method for the conversion of the wood after it reaches the mill.

A POSSIBLE SAVING OF 12 PER CENT.

Almost any manufacturer, however far behind the times he may be, would jump at the chance to buy his pulp wood at a price 12 per cent. less than he is paying for it. He would see in a moment how that saving would look on his cost sheet, but let the same amount of saving be put up to him in a different way and the chances are he will begin to look for the gold brick immediately. It is hard work convincing him that the installation of a simple machine will get him just this saving, and not only do it for one year but for every year as long as he stays in business; the strongest kind of arguments slip easily off his mind, and finally, though perhaps silenced, he is not convinced that the machinery builder is not trying to "do" him.

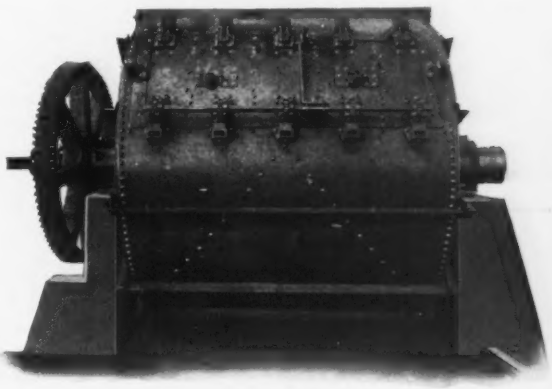
Not so with the progressive manufacturer. To him 12 per cent. saving looks good whether shown as a lower price per cord on the wood dealer's invoice or on his cost sheet in a decreased number of cords of wood per ton of pulp made, and that is why he is looking into the merits of the Bache-Wiig barking drum and installing it whenever his wood comes to him with the bark on.

This machine, invented and patented by Carl Bache-Wiig, differs from all others in that it does not employ a knife or other sharp instrument to effect the separation of bark and pulp producing wood, but makes use of the same principle which barks the logs in driving them down a precipitous mountain stream; namely, water and friction. The nearer we approach natural methods of separation the closer we also come to dividing the bark from the wood along the line of their natural division, and it is by operating on this principle that the Bache-Wiig barking drum obtains its great efficiency as a wood saver. On the other hand, knife barkers can only approximate this line, it being simply a question of how near they can reach it, and it is an absolute impossibility, even on perfect cylinders, to prevent cutting away some of the wood with the bark. If all wood which was to be barked was a perfect cylinder covered with a coating of bark of a uniform thickness it might be possible to so adjust a knife barker that only a small percentage of wood would be removed with the bark, but one has only to look at the actual conditions to see how far they are from perfect. It is a significant fact that while blocks coming away from the barkers are quite regular in form, the rough wood going to them is irregular. The natural question arises, "What has become of the wood which went to make up the irregularities?" The answer is, "It has been cut off and is on its way to the boiler house with a fuel value of 75 cents per cord."

ONLY THE BARK TAKEN OFF.

The amount of bark on pulp wood varies somewhat with the age of the tree, the kind of wood and the locality from which it came, and on the deciduous woods of the Northern States and Canada averages about 9 per cent. In barking wood of fair size (8 to 12 inches) on a knife barker the loss in barking runs as low as 20 per cent. with a careful workman, but averages under ordinary conditions about 24 per cent. With the Bache-Wiig drum the loss is reduced to the actual volume of the bark, or 9 per cent., a gain over the knife barker of from 11 to 15 per cent. By taking his cost of pulp wood for one month and figuring 11 per cent. of it, it is easy for an up to date pulp maker to see how long it will take him to pay for the machines out of the money saved by them. On small, undersized wood ths saving is very much greater, as the drum will bark small sizes as economically as large ones, whereas the loss on barking wood less than 6 inches in diameter on knife barkers runs up to 30 per cent. and over.

The best proof of the efficiency of the device, however, is the estimation in which it is held by the manufacturers who have installed it. In this conection the makers point to the significant fact that one large concern installed one drum three years ago for



THE BACHE-WIIG BARKING DRUM, MADE BY THE BAKER & SHEVLIN COMPANY, OF SARATOGA SPRINGS, N. Y.

trial, and after exhaustive tests covering a period of over a year it purchased others and is operating seven to take care of the product from its large sawmil, and has recently installed three more at one of its new plants.

The company is extremely pleased with its performance, finding that it operates with a lower labor cost per cord of wood and requires almost nothing in the way of repairs, there being no knives to wear out and change.

The drum is manufactured by the Baker & Shevlin Company, of Saratoga Springs, N. Y.

Germans Want Paper Sacks for Flour

In dealing with the question of transporting flour, the Papier-Zeitung quotes the following appropriate remarks: "What use is it for the miller to grind the best wheat in the best way, into the best flour, if he packs his product in porous sacks of textile material. In his clean mill he can with confidence describe his flour as first class; but the freight cars, with their mixed contents, are not so clean. * * * The cotton bagging attracts all kinds of impurities, and communicates them to the flour. * * * Insects are moreover attracted by the starch contained in the flour. * * * After some little time the flour is no longer the same as when it left the mill. * * * All flour sacks are covered with flour which has found its way out through the same channels which would admit impurities."

The Papier-Zeitung recommends its readers to bring the above remarks to the notice of their milling and flour dealing friends.

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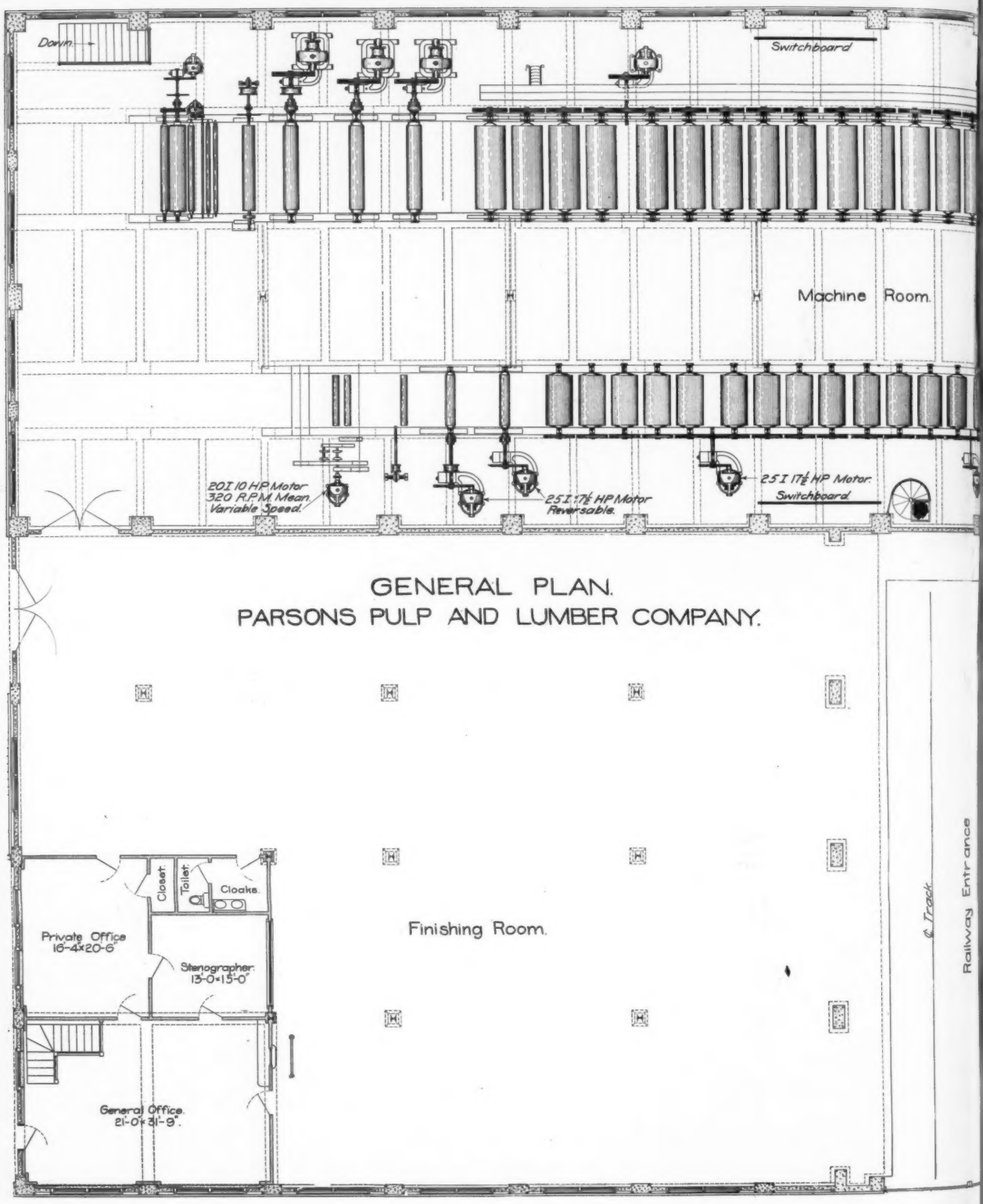
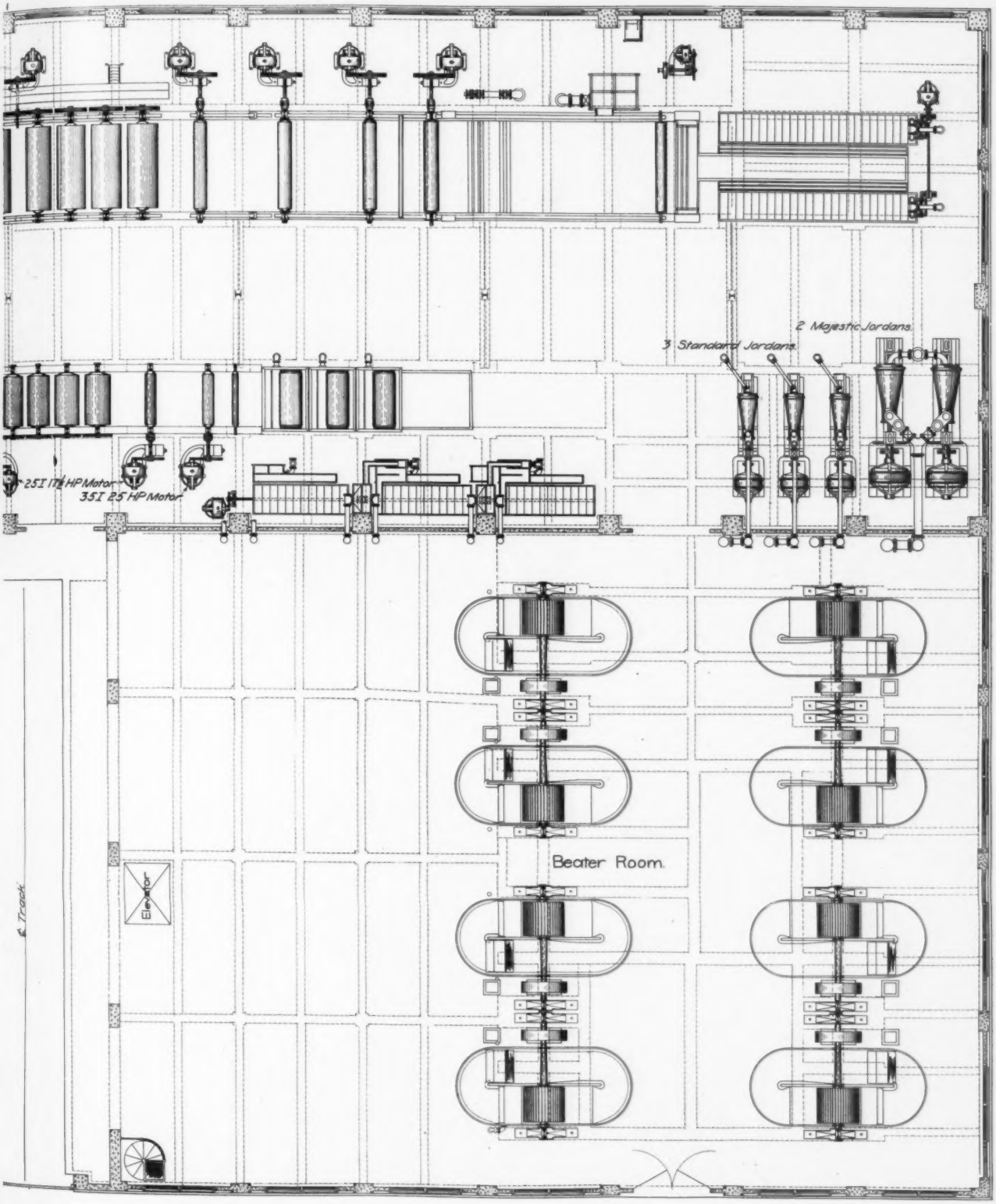


GENERAL PLAN.
PARSONS PULP AND LUMBER COMPANY.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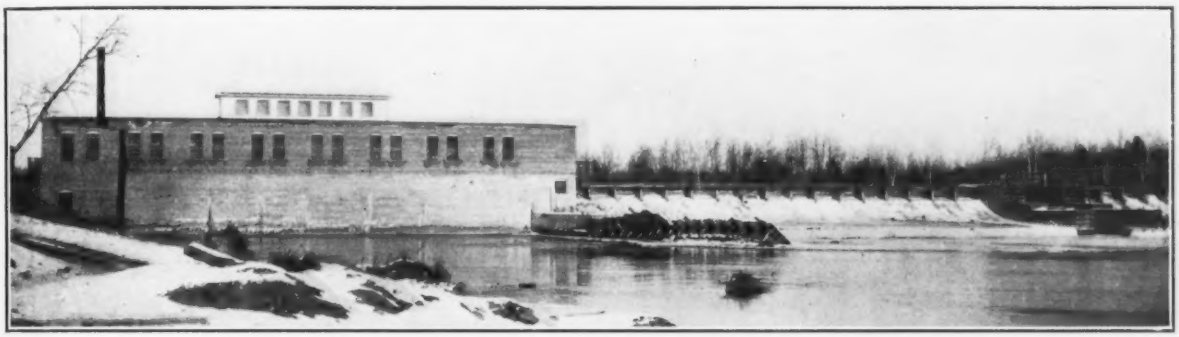
MONSTER KALAMAZOO POWER PLANT

The New Station of the Commonwealth Power Company Will Have a Total Capacity of 20,000 Horse Power and Will Furnish Electric Power to Paper Mills in Southern Michigan

KALAMAZOO, MICH., February 13, 1911.—With workmen hustling about and putting on the fina touches, and the fires banked under the big boilers ready for use, the model steam power plant erected in this city by the Commonwealth Power Company, will soon be in operation and turning out "juice." It is the last step taken by this great corporation to establish itself as one of the leading power producing concerns of America, and to make southern Michigan one of the leading sections in the United States.

The questions of adequate labor, shipping facilities, nearness to markets and cheap power are always before the manufacturer in locating his plant. Messrs. W. A. Foote and J. B. Foote and their co-workers seem to be solving the latter problem, for they have within the past decade converted the streams of Michigan into power producing sources and harnessed the clouds to drive the wheels of busy workshops and afford street railway and interurban transportation in many portions of this beautiful peninsula. And their work is not yet done. They see a greater Michigan in the future and will labor to care for its needs.



VIEW SHOWING PULP MILL AND DAM OF THE MENASHA PAPER COMPANY, LADYSMITH, WIS., JACOBSON & DE GUERE, ENGINEERS.

DIMENSIONS OF THE POWER HOUSE.

The Commonwealth Power Company's new power house and sub-station is located on the east bank of Kalamazoo river and is 143 by 101 feet in dimension, that being the size structure needed to house the first unit of the plant. From the standpoint of building construction and equipment it is one of the finest concerns of its kind in America and a credit to the engineering skill of J. B. Foote, who has full charge of the mechanical operations of the great corporation. Mr. Foote has been ably assisted by Engineer Fargee, who prepared the plans for the Kalamazoo power house, as well as many of the immense dams operated by the company.

The local plant was built on a low marshy piece of ground, but stands like the Rock of Gibraltar, its base and foundations of concrete being laid on the solid gravel bed below the muck ground. Thousands of barrels of cement were used to make the underpinning firm and immovable, and in many places this foundation is 15 to 20 feet in thickness. The superstructure is entirely of concrete and steel, with heavy walls of vitrified brick. The roof is a slow-burning composition and supported by steel trusses. Steel sash is used for all the windows, so when it comes to the possibility of a fire, there is in reality nothing to burn.

The east wall of the structure is at present only temporary, being of corrugated iron. Within the next twelve months this will be removed and the second chimney and second unit of the power equipment erected, when the plant will stand completed.

The site purchased by the Commonwealth company is sufficiently large for future extensions and President Foote stated that it was the intention of the company to have a total capacity of 20,000 horse power within the next few years, as he believed that the industrial growth of Kalamazoo would demand that size power house.

BOILER ROOM EQUIPMENT.

In the boiler room of the plant are five Wickes vertical boilers, two batteries of two each and one battery of one, each boiler being registered at 350 horse power. Each boiler is equipped with a Foster superheater and chain grates. The fuel is handled by means of a four-ton traveling crane with two tons carrying capacity, which is so designed that it will take the coal from the cars and place it in stock or in the hoppers above the furnaces, or take it from stock and place it in the hoppers or nearby cars. The same crane can also be employed to remove the cinders and load them on cars to be shipped away. This crane is equipped with a clam shell bucket.

The chimney, built by the Webbers, is of concrete and is 12 feet in diameter and 247½ feet high above the boiler room floor. The boiler room is also equipped with electric pumps for the make up water and direct steam duplex pumps for boiler feed. There is also an automatic water weigher and coal weigher, which enables them to know by the daily reports filed just the cost of producing a pound of steam for the generation of electricity. The boilers are fed by automatic regulators and pump governors. Provision is made for a coal crusher, which will be installed in the storage yard.

The water supply is taken from the Kalamazoo by means of an automatic intake, the surplus being discharged back into the stream. The water passes through a screen room, equipped with three screens and an electric hoist to be used when the screens are raised and impurities removed.

In the turbine room is a 4,000 horse power horizontal turbine, equipped with surface condensers and vacuum pumps. There is room for another turbine in this room, and Mr. Foote says it is quite probable that an additional one will be installed in the near future and used to relieve the present one. This apartment is also equipped with a thirty-ton Shaw traveling crane, with a loading capacity of fifty tons, which is designed to handle heavy machinery.

The west end of the building is designed for a sub-station to handle the high tension and transmission lines. There is room in this department to handle 25,000 horse power, which will soon be needed, as the company is preparing to connect Kalamazoo with the big power plants on the Muskegon river. Most elaborate

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switch boards are installed in this section of the building, while the transformers are also located here.

STEEL TOWER FOR TRANSMISSION LINES.

The company has recently secured a right of way along the banks of the Kalamazoo river as far as the north city limits of Kalamazoo for its steel tower line, capable of carrying four circuits of three transmission wires each. Steel towers have also been erected into the heart of Kalamazoo and soon the old style wooden poles will be a thing of the past, especially in carrying high tension wires.

Outside the building the Commonwealth Power Company is making many commendable improvements. A high concrete wall has been built along the river front and will finally be extended from Main street to the Michigan Central Railroad right of way. The ground will be filled in and laid out in a park area that will be a thing of beauty in that none too attractive section of the city.

Speaking of the future, Mr. Foote said: "It is our desire and intention to carry into Kalamazoo the very best of power facilities. Conditions there will be greatly improved in the next two or three years. Not only will we have completed our two unit steam plant, with a capacity of about 10,000 horse power, but Kalamazoo will be directly connected with the big dams on the Muskegon river, thus making available an additional 20,000 horse power. We also hope to be able to build another dam on the Kalamazoo river some time in the future."

There is no denying the fact W. A. Foote and J. B. Foote are men who do things. They are the leaders among the men who have done the most to develop the water power of Michigan and make this State a great manufacturing commonwealth. The Commonwealth Power Company, the Grand Rapids and Muskegon Power Company and the Eastern Michigan Power Company stand as monuments to their untiring energy and financial and engineering ability.

Residents of Southern Michigan are most interested in the career of the Commonwealth Power Company. This concern was organized in 1904 and took over several small power plants at Kalamazoo, Battle Creek, Albion, Marshall and Jackson. The campaign of development, or harnessing the clouds, has gone steadily forward until at this time the Commonwealth is a great institution with seven water power plants and three steam plants.

Six of the water power plants are located on the Kalamazoo river and one on the Grand river. The former are:

POWER PLANTS ON THE KALAMAZOO RIVER.

Trowbridge dam, 2,800 horse power.
Pine Creek dam, 3,400 horse power.
Plainwell dam, 1,600 horse power.
Ceresco dam, 1,200 horse power.
Albion dam, 250 horse power.
Battle Creek dam, 250 horse power.

On the Grand river is the Webber dam, with 4,800 horse power.

The three steam plants are:

Kalamazoo, 4,000 horse power (to be enlarged to 20,000 horse power); *Jackson*, 7,000 horse power; *Battle Creek*, 2,500 horse power.

Total water and steam 27,800 horse power, developed.

COMPANY CAPITALIZED FOR $7,000,000.

The Commonwealth Power Company is capitalized at $7,500,000, common stock amounting to $2,500,000; preferred, $5,000,000. Of the former $1,500,000 has been paid in, of the latter $1,270,000. The officers and directors of the company are: President, W. A. Foote; vice-president, E. C. Nichols; secretary, N. S. Potter; treasurer, George W. Ritchie; general superintendent, J. B. Foote; directors, W. A. Foote, J. B. Foote, N. S. Potter, Jackson; G. W. Ritchie, Kalamazoo; E. C. Nichols, G. W. Mechem, Battle Creek; E. P. Robertson, Albion.

The Commonwealth is also affiliated through its officers with the Jackson Light and Power Company, Economy Power Company, Allegan Hydraulic Company, Pine Creek Power Company, Jackson and Battle Creek Power Company, Plainwell Construction Company and the Ceresco Mill and Hydraulic Company.

The Grand Rapids and Muskegon Power Company operates two dams on the Muskegon river with a combined capacity of 20,0000 horse power, while there is also a steam plant at Grand Rapids with a capacity of 6,000 horse power, which will be enlarged to 16,000 this year.

The Eastern Michigan Power Company is at present building a 12,000 horse power dam at Cooke on the Au Sable river and has recently completed a very fine 4,000 horse power steam plant at Flint. This company also has plants at Saginaw, Bay City and Pontiac that will be developed as the needs demand.

This resume shows that the interests inspired by the Footes can at this time develop a total of 57,800 horse power by steam and water, while the next twelve months will see this amount increased by over 22,000, with the prospects that another 20,000 horse power will be added before 1915.

HOWARD P. HALL.

Durable Paper for Colored Printing

A correspondent of the Papier-Zeitung lately wrote that journal that he had received an inquiry for paper of such durability as not to be destroyed by time. It was intended to use this paper for three and four colored printing. The writer supposed that this inquiry was intended for the needs of the publishers in producing special copies. Replying to the above letter, the Papier-Zeitung remarks:

"Our correspondent could obtain the desired impressions on art printing paper, free from wood, in which the coating of casein is hardened by means of formaldehyde. German manufacturers of fine art printing papers should be in a position to meet this requirement.

"But durability for a lengthy period is more fully assured by uncoated papers, which are made by several fine paper mills, of such smoothness and uniformity that they are very suitable for polychromatic printing, although not in the same degree as art printing papers."

Cause and Prevention of Creases in Paper

As a writer in the Papier-Fabrikant remarks, it often happens that creases are the principal defect in the seconds arising in paper manufacture, but it is not always easy to locate the causes of the creases. With papers, it is remarked, which are delivered in the machine finished or like condition, or finished on one side, the creases can only be traced to one source—the paper machine. It is when papers are glazed that it is difficult to decide whether the fault lies with the paper machine or the glazing calender.

Finishing and glazing appliances, it is true, often turn out a relatively large proportion of seconds, but, it is added, this mostly happens when they have originally been in bad condition, or have been installed in the wrong position. If the rollers are not exactly parallel rational operation is impossible, and the occurrence of creases will cause much trouble. When the rollers are in order, and the machine is working free from concussions, creases must be due to irregular drying, which is also likely to produce blistery passages. Unevenly dried spots contract in an irregular manner under the drying felts, irregularity of this description being promoted by undue speed in drying.

Typewriting Paper Wanted

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 14, 1911.—The Bureau of Supplies and Accounts, Navy Department, is inviting proposals until February 21 for 700 reams typewriter paper for the Brooklyn Navy Yard, 8x10½ inches, proposals to state time in which delivery can be made.

A. F. T.

C. S. MAYO, Agent

A. N. MAYO,
President and Treasurer

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The Increasing Use of Electricity Attests Its Advantages

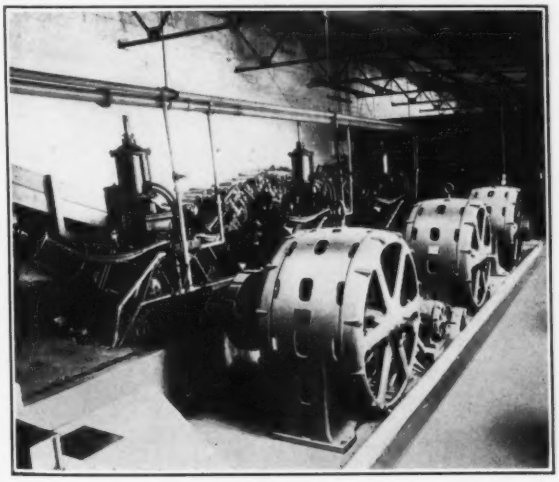
Pulp Mills Can Now Be Located to the Best Advantage, the Raw Material and Markets Considered—Cost of Transmission a Small Item—Increases Quantity and Quality of Product

(Written for the Convention Number of THE PAPER TRADE JOURNAL.)

By George Hersey, Industrial and Power Department, Westinghouse Electric and Manufacturing Company.

It has been customary, until recently, to grind wood pulp at the most convenient place to the source of power, and due to the fact that the power required for large pulp grinding plants was so large, the most of the applications were for direct-connected grinders to water wheels. There are various methods in which the water wheels may be connected to the stone, depending on the type and location, and also the space available for same. With horizontal water wheels, a very compact and efficient drive could be obtained by coupling one wheel to the grinder. If high head vertical wheels are used, long lengths of shafting and bevel gears are required on which the maintenance is very high and the power losses excessive.

While there is no question but what wood pulp will be manufactured as above described by direct connecting grinders to water wheels, the question is beginning to become more and more a vital one as to the transmission of power compared with the cost of bringing the raw material to the available source of supply if water-wheel machines were used. To overcome this difficulty, the paper makers have been going extensively into the question of driving grinders by electric motors, and the problem now seems to be very well solved, and the highly successful operation of



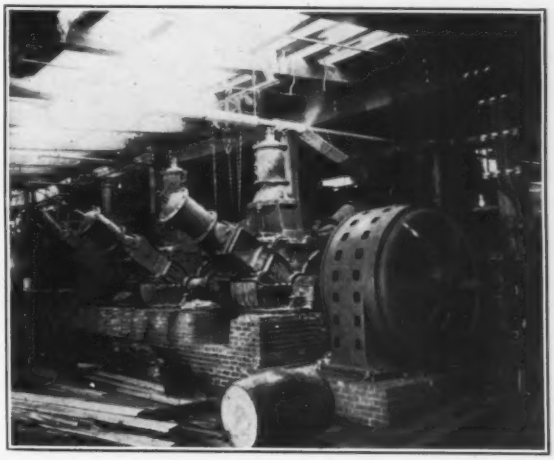
MOTOR DRIVEN GRINDERS IN MILL OF THE GRANDFATHER'S FALLS COMPANY, MERRILL, WIS.

several motor driven grinder plants throughout this country fully demonstrate the same.

Electric motors in the proper capacity and speed may be coupled to the grinders by means of flexible couplings, and drives of this type possess many advantages over those using water wheels. Each stone may be driven by one motor, or two or more grinders may be driven on either side of the motor, thus giving no limitations on account of the head of water, depending entirely upon the amount of power required to operate same. The individual drive is undoubtedly the most flexible, while with a drive of a grinder on each side of the motor, nearly as good results can be obtained from the point of flexibility.

CAN GRIND ANYWHERE WITH MOTORS.

Another of the greatest advantages in the use of motor driven grinders is the flexibility of arrangement—that is, the source of power does not establish the location of the grinders, and the



MOTOR DRIVEN GRINDERS IN MILL OF THE EASTERN MANUFACTURING COMPANY, SOUTH BREWER, ME.

amount of power necessary may be generated at the point where it can be most cheaply developed, and transmitted for long distances with comparatively small losses in transmission where the handling of the wood and the shipment of the manufactured product can be reduced to a minimum. This not only reduces greatly the manufacturing cost in a great many instances, but also reduces the cost of construction and brings the source of power to the best centers of transportation. Another great advantage in motor-driven grinders over water-wheel grinders, is that the latter are entirely useless in dry seasons, while the former may make use of power generated from any source.

Water-wheel type generators in the generating station with steam-driven auxiliary plant for relays to be used in dry seasons, will enable the plant to operate at its maximum efficiency during the entire year. In this connection it might further be noted that the large developments throughout the country of the big power companies has reduced the price of electric current, so that where power has not been available for customer to develop, or even where such power might have been developed, the low rate made by these large power companies, due to the steady and constant load of this cycle of work, have made a very profitable and paying investment from buying power and not installing a complete station.

INCREASES QUANTITY AND QUALITY OF PULP.

Besides makig a more flexible arrangement and giving continuous service, motor-driven grinders increase the quantity and also give a better quality of pulp, due to the fact that the speed is absolutely uniform, regardless of bulk. This can be readily seen from the fact that a water wheel will vary from light load to 50 per cent. overload very considerably in speed, while a motor working under the same conditions maintains practically a constant speed, taking power from the line in proportion to the work turned out and working at approximately the same efficiency from one-half-load to load and one-half.

In regard to the type of motor to furnish for this service, it has been found that owing to the amount of moisture and water that must necessarily be obtained in this class of work, that

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alternating current motors are more desirable than direct current motors, due to the fact that the alternating current motor has no exposed parts, that is, no commutator or brushes that might be injured, due to contact with water. The motors also can be made water proof, and this makes them practically indestructible as far as the effect of water, which, until the high development of electric motors.

The accompanying photographs give a very good example of electrically driven grinders. One photograph shows a three-pocket grinder directly connected to flexible couplings to induction motors. The control mechanism for operating these motors is located very conveniently to the machine, but enough out of the way so as to be entirely independent from the grinder unit. To the right of the first motor is shown a small motor. This is used for sharpening stone, and on account of the small size of the motor, a comparatively small amount of power is taken for this operation. The above motors are in the plant of the Grandfather's Falls Co., Merrill, Wis.

The other photograph shown herewith is an induction motor directly coupled to a two-pocket grinder at the plant of the Eastern Manufacturing Company in South Brewer, Me.

Plans Furnished Last Year by Jacobson & De Guere.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., February 13, 1911.—Paper mill architects and engineers Jacobson & De Guere, of Grand Rapids, Wis., furnished plans and specifications and supervised a number of very important building operations during the year just closed.

BUILT CONCRETE WAREHOUSE AND FINISHING ROOM

One of these was a reinforced concrete warehouse and finishing room for the Dells Paper and Pulp Company at Eau Claire. This building is 56x150 feet in dimension, two stories high, and is located between the office and present finishing room. The building is of reinforced concrete frame, consisting of interior and exterior columns and floor beams, and a curtain wall of 8 inch concrete blocks. The floor beams form panels of approximately 17 feet and 18 feet, and the floor is reinforced with iron rods in two directions. There is a steel truss roof covered with planking and composition roofing. This building is connected with the second floor of the present finishing room by a steel foot bridge 60 feet long. A freight elevator will be installed in the new building, and the upper part will be used for a finishing room, while the lower floor will serve as a storage and shipping room. There is a track in the building to enable loading under cover. The building was erected by the Ule Construction Company, of Grand Rapids, Wis.

FURNISHED PLANS FOR MONSTER DAM.

In the fall of 1909 Jacobson & De Guere furnished plans and specifications for the Davis Falls Land Company, of Eau Claire, Wis., for a solid concrete dam to be located on the Chippewa River about a mile above the station of Jim Falls on the Omaha Road out of Chippewa Falls. Before the close of the year a contract was awarded to the Ule Construction Company, and work was commenced about April 1, 1910. The dam consists of sixteen sluice gates, 16 feet wide and 13 feet high, with intervening piers; a spillway 209 feet long, and a core wall for an earth dyke 400 feet long. Owing to favorable conditions on account of low water no cofferdam work to amount to anything was required until the last stretch in the river was reached, and as this section was only about 135 feet long nearly all of the dam was completed before building a cofferdam, which proved an unsual situation. The dam maintains a head of 27 feet, although the dam in places is over 45 feet high. In order to develop the full head of this power a canal will lead the water on the east side of the river to a point about a mile below the dam to the power house site. With the water brought to this point a head of 55 feet can be created. This is by far the best undeveloped power in the State, as the head is high and the river drains an immense territory at this point.

BUILT BIG CONCRETE GUARD LOCK.

In addition to the dam a reinforced concrete guard lock was built at the entrance to the canal, with a retaining wall about 1,200 feet long extending from the dam abutment to the guard lock. Work was not begun on this until later in the season, but the guard lock and dam were completed about the same time. The guard lock consists of forty-two gates 8 feet wide and 8 feet deep, which will admit of sufficient water to pass through at a proper speed to develop 25,000 to 30,000 horse power under 55 feet head. Negotiations are now under way to complete the development by extending the canal walls and building a power house. Nothing has been spared so far in the way of expense to make the work already done the best of its kind. No wood of any kind has thus far entered into the construction of the dam or guard lock. While the complete development will represent a large amount of money, it will at the same time be a stable and safe investment on account of the enormous volume of available water.

SUPPLIED PLANS FOR BOILER HOUSE AND PULP MILL.

Plans and specifications were furnished for a boiler house and pulp mill for the Menasha Paper Company at Ladysmith, Wis. This work consisted of reconstructing the old boiler house and the building of a new brick, concrete and steel ground wood mill 70x100 feet, to take the place of the old structure. Only one-half of the latter building, however, was completed during 1910, but the balance will be built during 1911.

At the Watab Pulp and Paper Company, Sartell, Minn., a reinforced concrete and brick building was built for a conversion and bleaching plant. The buildings are 54x200 feet, three stories, and 40x74 feet, three stories.

FOX RIVER.

The Eibel Invention for Fourdrinier Machines.

After having made a careful study of the limitations of the Fourdrinier machine as it had always been run from the time of its inception a century or more ago, William Eibel of Rhinelander, Wis., discovered what was preventing a further development of this quite remarkable machine. All paper makers were familiar with the fact that waves and ripples were produced on the wire during the formation of the sheet, and that they were detrimental to good paper formation, but as no one had ever been able to overcome them they had come to be looked upon as an inherent fault of the Fourdrinier type of machine, and the speed of the machine had to be kept down to a point where their efforts were not so bad as to produce unsalable paper. Mr. Eibel saw that by relieving the wire of what had previously been one of its chief functions, viz., the actuating means of overcoming the inertia of the stock and getting the stock up to the speed of the wire, that the bothersome waves and ripples could be done away with and an enormous improvement brought about in the quality of the sheet and the production from the machine, due to better drainage and earlier sheet formation. In the accomplishment of this much desired result, gravity suggested itself as the most feasible means, which required an hitherto unheard of degree of pitch in the wire. It was a bold stroke in a new method of operation. Application for a United States Patent was made in August, 1906, which was granted in February, 1907. A patent was also granted in Canada, Great Britain and many other foreign paper making countries. While applicable to nearly all grades of paper, the invention has almost revolutionized the manufacture of newspaper. Nearly three thousand tons per day are made in America alone, by several of the largest manufacturers who are licensed to operate under the Eibel patent. When paper machine builders have effected certain other improvements it is probable that the Eibel invention will be called into play for making paper at speeds far in excess of any employed on the fastest machines of to-day.

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Printing Supplies for Brazil

Vice Consul General J. J. Slechta, of Rio de Janeiro, writing to the Bureau of Manufactures, says:

"The experience of a large American jobbing house, which handles all kinds of paper and printing supplies, in placing an agent temporarily in the Brazilian field seems quite conclusive of the fact that successful competition in this line is absolutely contingent upon the establishment and maintenance here of a complete stock from which the local demand can be supplied. For this there seems to be a multitude of reasons.

"One of the most important elements in the printers' supply trade in this and other Brazilian cities is the small job printer, of whom there are a large number. The job printer is seldom in a position to import direct. Even the large jobber and the newspaper establishments prefer, when possible, to choose their supplies from a local supply house. On the other hand, there is the difficulty attendant upon the preparation of a catalogue which will serve the purpose. For the French or German firms this is less a difficulty than with American houses, because of a similarity between standards and measures in the former and those used in Brazil.

"The American jobber in question supplied his representative with an elaborate catalogue, but upon soliciting a few orders the representative found that it was not possible to so explain his catalogue that his customers could make out an intelligible order and be sure that they would receive what they wanted or at the prices they expected to pay. Even then there would doubtless be the difficulty of gtting the head office to fill the order in accordance with unfamiliar specifications.

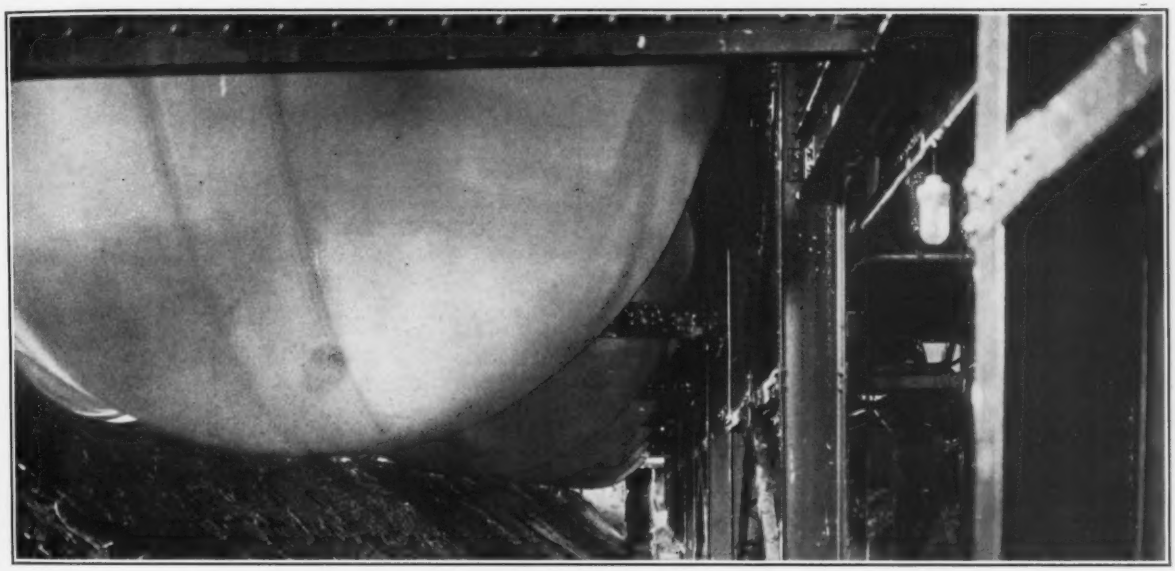
"The large jobber and supply dealer does not care to undertake the introduction of American goods unless the American exporter will supply the capital necessary to the payment of duties and to the risk involved in holding the stock for future sales. In this he may not be justified, but those are the conditions and must be frankly faced.

"The small job printer is not willing to buy any materials which he is not sure to have supplied readily at any time in the future. The difference in length of type, specifications of printing machinery and accessories, and in other essential points, between the standards adopted in the United States and those still in use in Brazil make it imperative that a complete stock be kept on hand here. Otherwise the customer cannot be persuaded to purchase American supplies and discard the French or other European supplies to which he is accustomed, and which he can buy from a local dealer.

"The trade is one which would justify an American manufacturer in setting up a branch establishment sufficiently complete to meet the demand from small job printers and backed by sufficient capital."

American Coating Mills, Elkhart, Ind.

The American Coating Mills, of Elkhart, Ind., was promoted by C. C. Colbert, and is backed by business men of Wabash and Elkhart, Ind. The president of the company is F. B. Walter, of Wabash, Mr. Colbert being vice president, treasurer and general manager.



VIEW SHOWING A FEW OF THE TWELVE ROTARY BOILERS IN THE MILL OF THE ALTON BOX BOARD AND PAPER COMPANY, ALTON, ILL.

C. C. Colbert has been actively engaged in the manufacture of coated papers for the past fourteen years, having been manager of the Wabash Coating Mills for the past three years, until he severed his connection with that concern to become identified with the American Coating Mills.

The new factory at Elkhart is equipped with four coating machines, two 60 inch and two 46 inch machines. All of these machines are new and up to date in every respect and have a large capacity for turning out paper. The rest of the mill is equipped with two Norwood calendars, four cutters, platers and trimming machines. The concern manufactures pasted litho blanks, tough checks, folding box board, cover papers and heavy litho.

The factory buildings consist of one coating room, 80x350; one color room, 30x40; one pasting room (two machines), 30x60; one finishing room, 140x80; one stock room, 120x60; another stock room, 60x100, and a box shop for making cases and crates, 60x100.

According to the German press the Oji Paper Manufacturing Company, of Tomakomai (Hokkaido), which has been under construction since 1907, will shortly be in operation. The production will consist of book paper and news, while a special electric power station, with a capacity of 15,000 horse power, is situated at a distance of fifteen miles on Lake Shikotsu. It is proposed to employ about 400 hands in the new factory.

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TWO MILLS

MICHIGAN PAPER COMPANY'S NEW MILL

The New Structure at Plainwell, Now Building, Will Be Thoroughly Modern in Every Respect—Will Have Two Machines—Mill to Cost $400,000—Its Construction and Equipment

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, MICH., February 13, 1911.—Eleven miles north of Kalamazoo in the thriving Village of Plainwell the Michigan Paper Company is building one of the finest mills in the Kalamazoo river valley district. From the mere mill structure to the equipment and machinery it will be a thoroughly modern plant and Plainwellites generally are pointing to it with pride, as the equal of any to be found in this section of the state which is becoming noted for its unusually fine paper mills.

It was four years ago that the Michigan Paper Company erected the mill now being operated. It took the place of a very old structure that for years had never proved a financial success, but with a reorganization of the company and the management placed in the hands of John F. Gilkey and William Thomas, the concern had completely outgrown the old mill and a new one was built. Dan J. Albertson prepared the plans for Mill No. 1, and while he exercised his best judgment in every detail that went to perfect that, he is quite willing to declare that the mill now under construction is in every way superior to No. 1.

NEW MILL TO COST OVER $400,000.

The new mill will cost (equipment included) over $400,000 and will have an annual capacity of about 9,000 tons. It immediately adjoins the original plant and is arranged to be run in conjunction with that mill at the minimum of expense. Reinforced concrete, brick and steel are used throughout in the wet portions of the mill, while the outlying buildings are of the slow burning type. A basement extends under the entire mill.

The stock house is 184 by 72 feet in size, five stories. The top floor being used as the sorting room. This building is equipped with Otis elevators and four 4-roll dusters and four 6-roll dusters, also stock carriers. A portion of this machinery is made by the Norwood Engineering Company, while a part has been built under the direction of the mill management.

The cooker room, two stories and 88 by 66 feet in dimensions is equipped with eight cookers from the Dayton Globe & Iron Works, Dayton, Ohio. These are not in anyway stock machines, but were manufactured according to specifications and under special order of William Thomas, superintendent of the mill. The top floor is arranged for the storage of sorted stock, while the basement will contain concrete stock tanks and transmission equipment.

The beater room is one story high and is 160x66 feet, Eight 1,000 pound beaters and nine 1,000 pound washers from the Dayton Globe Iron Works, also two Jordans, constitute the equipment of this department. The basement is devoted to transmission lines, tanks, drainers, etc. The beater room is connected with the old beater room, making it possible to take unfinished stock from one to the other without any inconvenience, the two divisions thus supplementing each other.

Parallel with the old machine room is the new machine room, 200 by 72 feet in dimensions. The equipment consists of two 130-inch Fourdrinier machines, manufactured by the Smith & Winchester Manufacturing Company, South Windham, Conn. These machines are operated by variable speed motors. Special attention to the ventilation has been made. The roll room, 48 by 81 feet, adjoins.

TO MAKE ALTERATIONS IN OLD MILL.

In connection with the erection of this mill it is planned to make decided alterations in Mill No. 1 to facilitate in the economical handling of the product of the entire concern. The present office will be done away with and a cutter room will occupy the present space. The present supercalender room will be utilized and the capacity increased by the installing of additional stacks of supercalenders, while the same finishing room now in use will do for both mills. It is also planned to add a new cooker room to Mill No. 1.

The power equipment of the new mill is also advantageously arranged. While entirely apart from the power plant of Mill No. 1, it is so arranged that the two can be run as a single unit, relieving each other as the needs require.

The engine room is 64 by 50 feet in dimensions. An 800 horse power cross compound Hamilton Corliss engine by means of a rope drive furnishes power to run the beating room equipment, while a 500 horse power simple engine, Hamilton Corliss type, is direct connected to a 300 k.w. generator, manufactured by the Fort Wayne Electric Company, Fort Wayne, Ind. The balance of the equipment consists of the condensers, pumps and heaters.

The boiler room, 64 by 49 feet in size has four 300 horse power vertical water tube boilers from Wickes Brothers, Saginaw. These boilers are equipped with Detroit stokers. Coal storage, 48 by 86 feet, sufficient to store 1,500 tons of coal adjoins. The new chimney of the plant is 7 by 150 feet.

Adequate fire protection throughout the plant is insured by the installation of a modern sprinkler system, underwriter pumps and other equipment.

HOWARDD P. HALL.

Swedish Pulp in Japan

Investigation by the Swedish Embassy at Tokio of the complaints made by certain Japanese buyers of wood pulp seems, according to the Papier-Zeitung, to have proven that as a fact certain parcels shipped from Sweden were inferior or damaged. This fact is partly attributed to insufficient sorting at the mills from which pulp was shipped, which should have been rejected, or at least not delivered as first class product. In other cases faulty packing is to blame, often consisting of only two pieces of iron wire one-eighth of an inch in thickness, and without any covering as a protection.

When such bales are shipped direct from Gothenburg to Japan, they may still arrive in somewhat good condition, but when transshipped at London, Hamburg or Amsterdam, they present a sorry appearance upon reaching their destination.

The Swedish embassy calls attention to the danger of Swedish pulp thus getting into disrepute. Japanese buyers would then prefer Norwegian or Finnish pulp. Moreover, the higher percentage of loss in working up damaged pulp would depreciate its value. Hence the importance of direct shipments, such as are now available through the steamers of the Swedish Oriental Company. A further advantage of that route is said to be the covered sheds in course of erection at the shipping points, so that the pulp would be protected from the damp which produces spots of mold when subjected to the influence of a tropical climate.

The Hammermill to Add Another Machine

It will be of interest to the trade to learn that the Hammermill Paper Company, of Erie, Pa., has found it necessary to again increase its capacity in order to satisfy the constantly growing demand for its bonds, writings and specialties. The new machine will be 132 inches wide and of the latest and most approved design. The work, which includes other important improvements and additions to the mill at Erie, is being pushed with the greatest energy, and the company expects to have this machine in operation by the end of the year. The paper machine is being built by the Moore & White Company, of Philadelphia, which concern built the last two machines for the Hammermill Paper Company.

According to German reports the paper mill in contemplation for Pekin will, in the first place, supply the requirements of the Chinese Government offices. The balance of the output, as well as that of the other new mills, will consist of printing paper.

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WORK OF GERMAN TESTING BUREAU

Reports of a Few Tests Made During 1910, All of Which Show the Possibility of Accurately Determining the Causes of Alleged Defects in Paper—Over a Thousand Tests Made

Various tests have within the period last reported on (1909) been undertaken by the Government Testing Establishment at Gross-Lichetrfelde, near Berlin, all of which are of interest to paper manufacturers.

When to Examine a Shipment of Tracing Paper.

In one case a judicial tribunal addressed to the establishment an inquiry as to whether there is a custom in the tracing paper trade according to which the rolls are not unwound immediately on receipt, but later on, when they are to be impregnated. With a view to defining this point the establishment addressed interrogatories to eleven of the leading tracing paper manufacturers in Germany. From the answers received it was evident that no fixed custom exists as to the exact manner of examining and accepting the paper in an unfinished state, the point being one regulated by the customs which have become established during the course of relations between sellers and buyers.

Spontaneous Combustion of Waste Papers.

Another interesting case was that of a claim made by the railway authorities on the shippers of a carload of waste paper which had taken fire and endangered other goods. It was alleged by the plaintiffs that the ignition of the paper was the result of spontaneous combustion, arising from the presence of fatty and oily substances. From an examination of samples of the paper in question it was proved that such was not the case. It was further held by the establishment, on the ground of information obtained, that even had the paper contained fatty or oily pieces spontaneous combustion would have been most unlikely. Inquiries had been made from twelve paper sorting concerns, ten board mills and ten fire insurance companies.

Fibre Decomposition and the Bone Dry Basis.

On the request of the Society of Cellstuff and Paper Chemists a number of experiments were carried out upon sulphite, soda and straw pulps, with the object of defining, whether in determining the dry weight by heating up to 100-105° C., such a decomposition takes place, that the dry weight shown is too high or too low. The experiments proved that drying at the temperature named, as hitherto customary, is free from objection, and gives accurate results. Even by increasing the temperature up to 120° C. there did not result such decomposition as to influence the dry weight, even if the pulp was not thoroughly washed.

Spots in Writing Paper.

An Austrian paper factory sent for testing a writing paper containing numerous stains, the spots being dark under a light falling vertically and being of light color when the paper was looked through. Experiments demonstrated that the stains consisted of silicated straw cells.

An Alleged Infringement of Parchment Patent.

Four samples of paper were submitted for the purpose of defining whether they were to be regarded in the sense of a patent claim, as being "material of construction similar to that of parchment paper," thus infringing the patent referred to. Investigation proved that the papers did not resemble parchment paper, either externally or in their condition of grinding.

Tests on Carbon Papers.

Tests were made of nine descriptions of carbon paper for account of a factory. The points to be determined were—thickness, equality of coating, number of available impressions, number of impressions which could be taken from the same place, erasures in the copies, etc. The result of the tests was that the nine samples were found to be suited for the production of carbon copies.

Mucilage, Not Envelope Papers, at Fault.

A paper factory sent in three samples of envelope paper, regarding which complaints had been made that it would not properly take the adhesive substance employed. After refuting the assertion of another testing establishment that the paper contained stearine and wax, the experts at Gross-Lichterfelde found that the fault lay, not with the paper, but with the inferior description of mucilage which had been used.

A Complaint About Sizing.

Colored paper had been for years delivered by a paper manufacturer to a dealer, the latter having complained of a progressive deterioration in the sizing, until at length he insisted on the original standard being maintained. Investigation proved that the dealer had had cause for complaint, but that the deliveries of the last year had been, as to sizing, up to the mark of the earliest shipments.

A Look-in at the Cooked Stock House of the Alton Box Board and Paper Company, Alton, Ill.

Experiments in methods of preserving manuscripts from decay have resulted in the perfecting of a composition for that purpose.

Testing Bureau Not Used Extensively.

Some disappointment has been felt at the limited extent to which manufacturers have availed themselves of tests for the durability of various descriptions of paper. Only thirty-nine samples were submitted, while some 500 or 600 had been looked for.

In forty cases tests were made for account of manufacturers, of papers intended for delivery to various public bodies, the number of separate samples having been 855. Eight paper experts passed their examination during the year 1909, including one from America.

From this brief extract of the most important tests made during the year 1909 by the Gross-Lichterfelde Testing Establishment its scope will be appreciated. Paper is bracketed with textiles in the third of its six sections, the total number of paper tests in 1909 having been 1,011, of which 680 were for account of public bodies and 331 for private individuals and firms.

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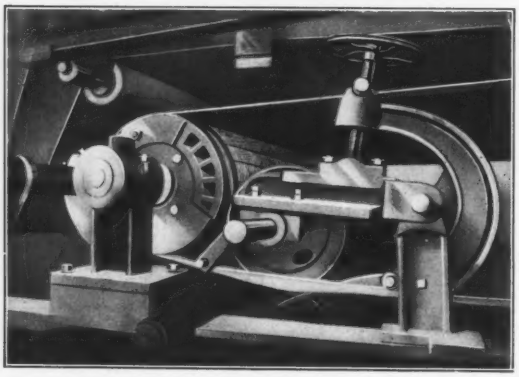

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A NEWFOUNDLAND MILL

A. E. Reed & Co. Are Building a 144 Ton Ground Wood Plant

The Second Large New Mill to Be Built on the Island Is of Concrete and Steel, and Is Equipped With All the Latest Appliances—The Company Has Large Timber Limits

The new mechanical pulp mill which A. E. Reed & Co. Newfoundland, Limited, is building at Bishop's Falls, Newfoundland, will be ready for operation about March 1.

The Reed concern has timberland limits under license on the island which cover an area of 1,000 square miles.

The capacity of the whole mill, when completed, will be 144 tons of ground wood daily. At present but half this capacity is being developed; the second half will probably be added next summer.

The mill is equipped with nine grinders, which take 30 inch wood. These machines were built by the Holyoke Machine Company, of Holyoke, Mass. There are four pairs of water wheels, three for the grinders and one for the electric generator. These wheels were furnished by the S. Morgan Smith Company, of York, Pa.

The electric generator, which is of 500 kw. capacity, is from the Siemens Brothers Dynamo Works, of London, England. All the other electrical equipment, which consists of twelve motors of from 10 to 200 horse power capacity, switchboard, transformers and motor generator set, was supplied by the Westinghouse Electric and Manufacturing Company, of Pittsburg, Pa.

The pulp logs are cut on two saws of the swinging up type, and including the log hauls were furnished by the Waterous Engine Works Company, of Brantford, Ont. This company also supplied the pulp wood barkers, of which there are seven, each of 60 inch diameter. These barkers are equipped with the Lombard block turning attachments.

There are six pulp screens in all, three of which were furnished by Jensen & Dahl, of Christiania, Norway, the other three being supplied by Jens Orten, Boving & Co., agents for Karlstads Machinery Works. These screens are of the horizontal centrifugal type, and the rejections from the screens are refined by six horizontal refiners, which were furnished by Jens Orten, Boving & Co.

There are sixteen machines, which are in part equipped with the "Gaara" sieves, all of which are provided with the "Grondahl" cutting-off apparatus. The wet machines were furnished complete by Jensen & Dahl, who also furnished a complete pulp pressing equipment, consisting of eight main pulp pressers and four baling presses, together with the necessary pressure pumps and pulp carts; also a pressure accumulator for use with the press equipment, which latter was supplied by the Canadian Boomer & Boschert Press Company.

The heating and ventilating of the mill buildings is taken care of by the blower system, installed by the Buffalo Forge Company, of New York city. The steam for the heating system is supplied by one horizontal tubular boiler equipped to burn waste. The boiler was furnished by the D. M. Dillon Steam Boiler Works, Fitchburg, Mass.

The entire mill is provided with a sprinkler and fire protective equipment, in accordance with the rules of the Associated Factory Mutual Fire Insurance Companies. The fire protection includes a 75,000 gallon tank on a tower 100 feet high, which was built by the Chicago Bridge and Iron Works.

There is a steam driven underwriter pump of 1,000 gallons capacity, furnished by the George F. Blake Manufacturing Company, of New York city. There is also a rotary underwriter pump, made by the Goulds Manufacturing Company, of Seneca Falls, N. Y. The entire sprinkler system was furnished by the General Fire Extinguisher Company.

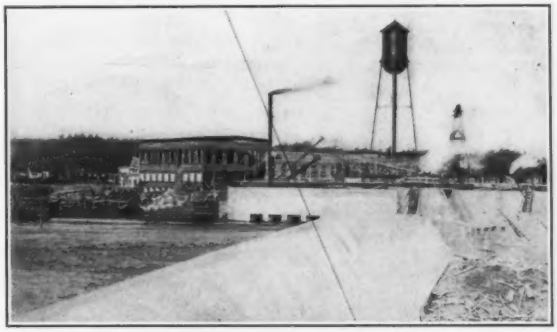
The main water and stock pumps are of the centrifugal type, and were furnished by H. R. Worthington, of New York. Other miscellaneous pumps, which are of the centrifugal type, were furnished by the Lawrence Pump and Engine Company, of Lawrence, Mass.

The pulp, after baling, is placed on railroad cars, which are run inside of the mill, by means of an overhead three motor electric crane. This overhead system was furnished by the Pawling, Harnischfeger Company, of Milwaukee, Wis. The shifting and unloading to storage piles is accomplished by a 10 ton locomotive crane equipped with a 30 foot boom. This crane was furnished by the Brown Hoisting Machinery Company.

All power transmission machinery in the mill was furnished by the George V. Cresson Company, Philadelphia.

All the conveying machinery for wood blocks and barker room waste, including block storage conveyor 600 feet long and 50 feet high, were furnished by the Jeffrey Manufacturing Company.

The dam at the mill is of the hollow reinforced type, 800 feet long and of an average height of 30 feet. It is built from designs of the Ambursen Hydraulic Construction Company, of Boston.



A. E. Reed & Co.'s Newfoundland Pulp Mill—General View of Mill and Dam in Foreground.

The buildings are made of concrete and steel, with concrete floors throughout. All are one story in height, except the wood preparing room, which is two stories.

George F. Hardy, of New York, furnished the plans for this plant, and is the engineer in charge of construction.

Paper Free from Rust

In commenting on the above subject, with reference to the packing of steel or gilt metal goods, a writer in the Papier-Zeitung remarks that papers which may be quite suitable for the former purpose, may not be so for the latter, and vice versa. Free acid and free chlorine should not be present in either case. Care must, moreover, be taken that the paper used for packing such goods contains no sulphur, nor any organic combinations of same.

One of the undesirable combinations, most frequently met with, is sulphuretted hydrogen, which is chiefly found in paper made from rags, where the pulp has been some time on hand in the wet state. Decomposition commences in such cases; the unpleasant odor revealing the presence of sulphuretted hydrogen. Such pulp should never be used for paper, intended for the packing of gold and silver articles, while paper thus made does not affect bright steel ware.

The suggestion is offered that when papers are tested for the above purpose, they should not be condemned on a single trial, but a second test made, with the object of seeing whether the process of investigation may not be at fault, instead of the paper itself, which is often wrongfully blamed.

MILLS ON THE NORTH PACIFIC COAST

The Section Has Great Possibilities—An Abundance of Wood and Water—Its Market Will Be Enlarged With the Building of the Panama Canal—What Architect Vogel Says

That the island of Vancouver has a great future as a paper and pulp making section is the positive opinion of C. H. Vogel, mill architect and hydraulic engineer, formerly of Ottawa, Canada, but now permanently located in the city of Vancouver. To a representative of THE PAPER TRADE JOURNAL who interviewed Mr. Vogel in New York this week he expressed himself in regard to the paper making possibilities of the far western section as follows:

"Perhaps the best way to demonstrate the possibilities of paper making on Vancouver Island is to show you two photographs showing booms of logs which were cut at Swanson Bay, over 400 miles up the coast from Vancouver. They will give you some idea of the size of the timber in that locality. The varieties are spruce, cedar, hemlock and larch. The larch is very much the same as our Eastern balsam; it grows, however, larger and there are two varieties. The hemlock also grows much larger than in the East, and the grain is much finer. I might say that the fir belt extends northward only about as far as the northern portion of Vancouver Island, and is very uncommon farther north.

"At Swanson Bay is a very complete little sulphite plant of about 25 tons capacity and a medium sized sawmill. This was erected by English capital, and it has demonstrated that the British Columbia spruce is capable of producing an excellent sulphite fibre. I understand that larch and hemlock have been tried there with good results, but I have seen no samples of the same. There is any amount of lime rock along the coast suitable for the sulphite process, and I understand that sulphur was laid down at the mill for less than $25 per ton.

CLIMATE ON NORTHERN PACIFIC MILD.

"On the Pacific Coast the climate is very different from what might be expected, considering its latitude. This coast is tempered by the Japanese current, and logs are floated on tidewater the year round as far north as a portion of the Alaskan coast. As an illustration I may say that six years ago in the latter part of January I was at Swanson Bay, and there was no snow near sea level and no frost in the ground. While in the mountains at an elevation of 1,000 feet or more the snow in some places was probably over 50 feet deep. A lake about half a mile back from tidewater and at an elevation of over 350 feet above sea level was not frozen over, but had a small fringe of ice along one edge. I understand, however, that since then several feet of snow have fallen and that the lake has been frozen over. Further inland the climate is tempered by the Chinook winds, coming from the West and extending their effect for 100 miles or more east of the Rocky Mountain range, so that in Alberta, further north than Edmonton, horses pick their own living and thrived without artificial shelter. While cattle require no artificial shelter, it is advisable to provide feed in addition to what the prairie affords. This Alberta country, I might say, is very different from the coast. We have very little snow and the streams are frozen very much the same as in the New England States."

WATER POWERS HAVE VERY HIGH HEAD.

In answer to an inquiry as to whether there was plenty of water power as well as wood in that section, Mr. Vogel said:

"The water powers along the British Columbia coast are very different from those in the East or the interior of the country. The annual rainfall ranges somewhere about 6 feet or over and the mountains are very high, storing considerable energy in the form of snow on their tops, as well as large bodies of water in the lakes formed by the fissures, so that water powers having a head of from several hundred feet to over a thousand feet are not uncommon. Under these high heads, of course, it is advisable to use a special wheel known as the Pelton type, manufactured by a number of firms in the West. The Pelton Water Wheel Company, with head office here in New York, has large factories at San Francisco, and I think has furnished wheels for developments under the highest heads thus far used."

Referring to the Port Mellon plant, now closed down, Mr. Vogel said:

"The closing down of this plant is one of the unfortunate things which could only happen with a new industry in a new country. I understand, though, that the company has valuable timber limits and water power on the northern portion of Vancouver Island, which probably offer opportunities for a profitable undertaking.

MILLS IN COURSE OF CONSTRUCTION.

"The firms now having mills in course of construction are the Powell River Paper Company, in which among the prime movers

A PART OF A BOOM OF LOGS AT VANCOUVER ISLAND.

are prominent members of the Brooks-Scanlon Lumber Company, of Minneapolis, and Mr. Nelson, president of the Hennepen Paper Company, and the Ocean Falls Pulp Company, under the direction of Lester W. David, a well known lumberman of Seattle. These firms have experience, capital and executive ability, and have secured the best of engineering skill and will make a success of the undertaking, which will bring British Columbia into prominence as a paper manufacturing province.

"There is also a small mill being constructed near Vancouver to use the waste papers from the city and make deafening felt, building paper, etc. This mill will also be able to secure sulphite and ground wood pulp to keep a cylinder machine busy on such material as the local market demands. This mill was designed by Noble Heath, who has long experience in the paper industry. Mr. Heath will also operate the mill, and as long as he stays with it we are assured the wheels will turn in the right direction.

IN REGARD TO THE MARKET.

"I am not in a position to speak definitely with regard to the extent of the market for news and wrapping paper. I understand, however, that there are several carloads shipped daily to the Western coast from Eastern points, notwithstanding the large mills in operation in Oregon. Then, we have a public highway leading to every seaport in the world, and which will long remain in good repair without a cent of expense for maintenance. The route may be a little long, but the Panama Canal will shorten it considerably for European points. The rate on pulp and paper is generally low, and there is no limit to competition in transportation. To what extent trade could be developed with Australia, South America, Japan, China and other countries on the Pacific I am not in posi-

(Continued on page 265.)

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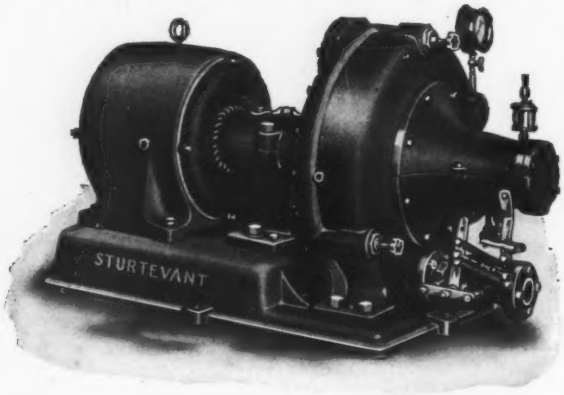

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Wants and For Sale..... .....Pages 58-59

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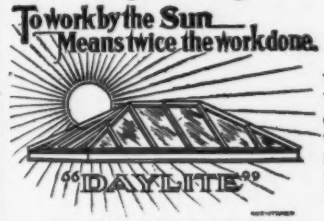

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CANADIANS WANT TECHNICAL SCHOOLS

The Paper Industry of the Dominion Needs the Services of Technically Trained Young Men, Says a Report to the "Royal Commission on Industrial Training and Technical Education"

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Canada, February 13, 1911.—In a report to the Royal Commission on Industrial Training and Technical Education, F. L. Crosly, analytical chemist, says in part: "Commercial conditions are becoming such in this country that the wasteful policy of a large and rapid output of pulp wood, regardless of quality, must give way to that of careful technical supervision and attention to detail, with its consequent economies and more uniform products. The Canada paper trade stands at the door of an opportunity that calls for efficiency at least as much as protection. Canada has great opportunities of becoming a factor in the world's paper trade. Therefore we should bring about these things in the establishment of schools for improved technical efficiency. There are no such schools in America, but in Europe they have been established and found valuable.

"Canadian manufacturers are extremely interested in the establishment of such schools and want to see some such institutions in operation. One firm has had one of its members take a course at such a school in Manchester—which is perhaps the best equipped in the world.

"If young men are to grow timber for paper making it is certainly desirable that they understand the elements of pulp and paper technology. The suggestive possibility of making from balsam as good a pulp as from spruce, or the introduction of other woods to serve as a source of paper, seems to be a very legitimate branch of the Forestry Service." R.

Protection of Drying Cylinders from Rust

At the last meeting of the German Society of Cellstuff and Paper Chemists, the following question, received from an American member, was reported by Professor Dr. Schwalbe:

"What should be done to protect from rust drying cylinder on which paper is running which contains certain quantities of salts giving off acids?"

He referred to a proposal emanating from the board, to apply to these cylinders a coating of cellulose-acetate-varnish, and invited further expressions of opinion.

In the ensuing discussion the president, Dr. Max Müller, reported that the above named method of rust prevention had proved the most successful. Geheimrat Dresel suggested, from experience, the covering of the cylinder with a thin jacket of copper, while Herr Wieselgren recommended the application on the cylinder of a small quantity of white lead grease.

In summing up the president remarked that cellulose-acetate is well adapted to prevent rust, because in steam drying cylinders a temperature is usually employed of not more than 110° C., while the above named compound would stand up to 150° C. He added that the results of experiments on this subject would be appreciated by the society.

Mills on the North Pacific Coast

(Continued from page 260.)

tion to even guess, but so long as civilization is on the incline the demand for paper is going to increase.

THE DISADVANTAGES OF FAR WESTERN MILLS.

"Now, I have been telling you pretty much the sunny side of the Western coast. We must not forget that it has its disadvantages, like any other locality. Skilled labor costs more in the West than anywhere in the East, but I doubt if there would be as much trouble from general strikes. Again, we are farther from the manufacturing centres for getting machinery and repairs. These two items alone add to the cost of construction and manufacturing. And, of course, must be offset by other items of advantage, which are principally in the way of cheap material, cheap power and fuel, as it would be quite natural to operate a sawmill in connection with the paper and pulp plant, thus cutting out the coal bill; and since the sawmills, as a rule, run the year round, floating the logs in as required—this one condition alone is a decided advantage over operations in the East.

MISREPRESENTATIONS HURT THE SECTION.

"One thing which hurts the country is the way that resources have so often been misrepresented to capitalists. I am not posted in mining, but I know there is any amount of timber on paper which is not to be found on the land designated, and very often when the timber is actually there it is inaccessible, or for some of the various reasons may not have the value represented. For instance, a lumberman told me not long ago that he went to cruise a certain piece of timber; he found the quantity and quality as represented, but the ground was covered with large boulders up to the sides of the cottage, so that it would be impossible to fell the timber without breaking it to pieces. Such misrepresentations are one of the worst drawbacks to the country, but people exercising care and caution are quite sure to get value for their investment."

A LOG BOOM IN SWANSON BAY, 400 MILES UP THE COAST FROM VANCOUVER.

Mr. Vogel was recently called to Montreal on business connected with a big power development proposition, but will return to Vancouver this week.

Match Making Destroys More Forests Than Paper

The manufacture of matches is doing more toward wiping out the great forests of the nation than the manufacture of paper from wood pulp, acording to a statement of Curtis Guild, Jr., president of the American Forestry Association, in his recent annual address at the New Willard Hotel, Washington.

The reason assigned by Mr. Guild for this condition is that the paper manufacturers, realizing that conservation of the wooded sections is imperative, take from the forests scientifically, while the match makers take every tree, regardless of ultimate result.

President Guild made an impassioned plea for support in securing the passage of the Appalachian forest reserve bill on February 15. He cautioned the delegates against permitting the consideration of amendments, claiming that would be simply a play to secure postponement and ultimate defeat. Mr. Guild pointed out that for many years the Atlantic coast had paid its part toward the $4,000,000 annually appropriated for the care of the 195,000,000 acres of forest reserve in the West, and said that nothing had ever been given the Appalachian slope for the creation of forest reserves.

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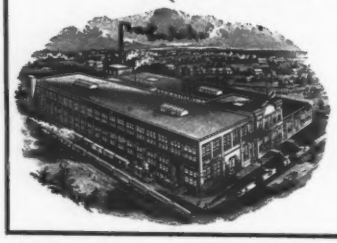

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PHILADELPHIA IN PAPER MAKING

The Story of the Rittenhouse Mill, the First in America, Retold for the Benefit of the New Generation—Descendants of the Founder, the Nixons, Still Making Rope

By P. J. HOFFNER.*

(Written for the Convention Number of THE PAPER TRADE JOURNAL.)

The first paper mill in America was erected by William Rittinghuysen (Rittenhouse) in 1690 on a stream now known as Paper Mill Run, a tributary to the Wissahickon Creek, about two miles above its junction with the Schuylkill river. The son of a Mennonite minister and of a family of paper makers in the old home, William Rittenhouse, the pioneer paper maker, became the great grandfather of David Rittenhouse, the famous American astronomer. The father William, a Mennonite preacher, came to this country and settled in 1688 in Germantown and here. The son William erected his mill. The children of William Rittenhouse were associated with their father in business and learned from him the art of paper making. These were Klaus (or Nicholas) and Garrett (or Gerhard). Wm. Rittenhouse died in 1708 at the age of 64 years and was buried in the Mennonite churchyard, on Germantown avenue, but the exact location has never been determined as no stone or tablet was erected to mark his last resting place, although he occupied the distinguished position of a bishop in the Mennonite church.

Nicholas Rittenhouse married Welhelmina Dewees, a sister of William Dewees, who, in 1710, established the second paper mill in America, on Cresheim Creek, a small stream which empties into the Wissahickon, a short distance from the Valley Green Inn. Nicholas died in 1734. He had three sons, William, Henry and Mathias, who was the father of David Rittenhouse, thus making William Rittenhouse the great grandfather of the distinguished philosopher.

THREE MILLS AT OR NEAR ORIGINAL SITE.

There were practically three paper mills built upon or near the original site. The first was washed away in 1692, the second built on the foundations of the first, and the third some five hundred or six hundred feet below the second. The fourth which followed was near the mouth of Paper Mill Run and was owned and operated by Martin Rittenhouse.

Thus seven years after the arrival of William Penn the manufacture of paper was established as a pioneer industry. Ten years later Franklin started The Pennsylvania Gazette. The first English Bible in the United States was published in Philadelphia and in 1782 and 1784 the first daily paper "The American Daily Advertiser" was issued. This afterward changed its name to "The Aurora."

DESCENDANTS OF RITTENHOUSE STILL MAKING PAPER.

After his departure for America it is declared that the relatives of William Rittenhouse still pursued the business of paper making at Arnheim, and the manufacture of paper in this country has been carried on down to the present time by the descendants of the original Rittenhouse pioneers, as will be seen by the following statement, copied from the very interesting volume by Daniel Cassel, in which he has gathered the statistics pertaining to the Rittenhouse family, tracing its descent through long generations.

"William Nixon, who, with George F. Feinour, founded the paper manufacturing establishment of Feinour and Nixon, was a descendant of the original Rittenhouses. Nicholas Rittenhouse (fourth generation) had a son named Martin, whose daughter Susanna married Daniel Adams Nixon, a paper maker, who was the father of William and Martin Nixon, and W. H. Nixon was a son of William Nixon."

William H. Nixon, who is the head of the famous paper mill at Manayunk, Philadelphia, it will thus be seen, is the grandson of Susanna Rittenhouse. The firm of Martin and William H. Nixon was established in 1879, and incorporated in 1888, and the group which forms the immense plant, and known as the Flat Rock paper mills, covers an area of three acres, with fifteen distinct buildings, containing the most approved machinery for the production of an exceptionally high grade of paper.

THE RITTENHOUSE HISTORICAL ASSOCIATION.

It is a matter of commendation that the descendants of the original members of the Rittenhouse family should have had their pride sufficiently aroused to form an organization for the purpose of tracing the genealogy and preserving in tangible form the valuable information which has in this way been secured. The occasion which prompted this organization was due to the fact that in 1889 the City of Philadelphia was making an effort to acquire a tract of land along the Wissahickon for the purpose of converting it into a public park. This tract embraced a part of what was known as the original "twenty acres," and on this was located the birthplace of David Rittenhouse, and there was a fear that the destruction of the house in which the philosopher was born might ensue. The house, however, is still preserved.

DEWEES MILL WAS THE SECOND.

Dr. Naaman A. Keyser, who has given the subject of Germantown a most thorough research, says:— "From 1690 to 1710 there was but one paper mill in America. The second was erected in 1710. This was the Dewees mill, built by William Dewees, whose sister was married to Nicholas Rittenhouse. The Wissahickon afterward had a number of large mills erected along its banks, and of these the Megargee Mills were said to be among the finest. After its abandonment it gradually fell into ruin and in 1884 what was left of it was torn down by direction of the commissioners of Fairmount Park. The mill site was a valuable one and the manufacture of paper was continued there for nearly a hundred and fifty years.

* Mr. Hoffner is connected with The Garrett-Buchanan Company and is a member of the City Historical Society of Philadelphia.

Meeting of Western Paper Dealers

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, February 13, 1911.—The annual meeting of the Western Paper Dealers' Association was held at the Grand Pacific Hotel on Saturday evening last.

After a dinner, which preceded the regular program of the evening, President James White, of the association, called the meeting to order, and the regular reports of officers and committees were duly read and approved. After this the new officers of the association for the coming year were elected, as follows:

President, Isaac W. Carpenter, of the Carpenter Paper Company, Omaha, Neb.; first vice president, W. C. Gillette, of the Chicago Paper Company, Chicago; second vice president, F. L. McClellan, of the McClellan Paper Company, Minneapolis, Minn.; secretary, A. H. Dwight, of the Dwight Brothers Paper Company, Chicago; treasurer, Joseph Joyce, of the Empire Paper Company, Chicago.

Five delegates to the annual convention of the National Paper Trade Association, in session in New York this week, were chosen as follows: James White, of the James White Paper Company; E. A. Mason, of the Midland Paper Company; Joseph Joyce, of the Empire Paper Company; W. C. Gillette, of the Chicago Paper Company, and Mr. Etnier, of the Dearborn Paper Company, all of Chicago.

George W. Olmstead, of the J. W. Butler Paper Company, was elected a member of the executive committee of the National Paper Trade Association.

The deliberations of the associations were harmonious throughout, and while the attendance was not large, it was interesting. Those from outside points who were in attendance were: F. L. McClellan, of the McClellan Paper Company, Minneapolis; C. R. Field, of the Carpenter Paper Company, Omaha; Charles F. Schwarz, of the Nebraska Paper and Bag Company, Lincoln, Neb.; Fred M. Greene, of the John Leslie Paper Company, Minneapolis.

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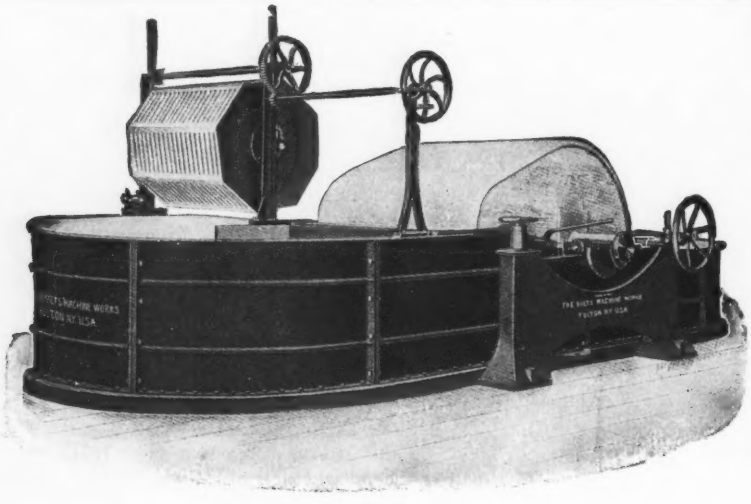

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PAPER IN THE FAR EAST

Import Trade in China—Use of Millet—Establishment of New Mills—Chinese Market for News Print—Commission to Pass Upon Use of Machinery—Japanese Pulp and Paper Industry

Some interesting reports concerning the paper trade of the Far East have been received from American consuls by the Bureau of Manufactures, covering districts of Hongkong, Canton and Yokohama.

Writing from Hongkong, Consul General George E. Anderson says:

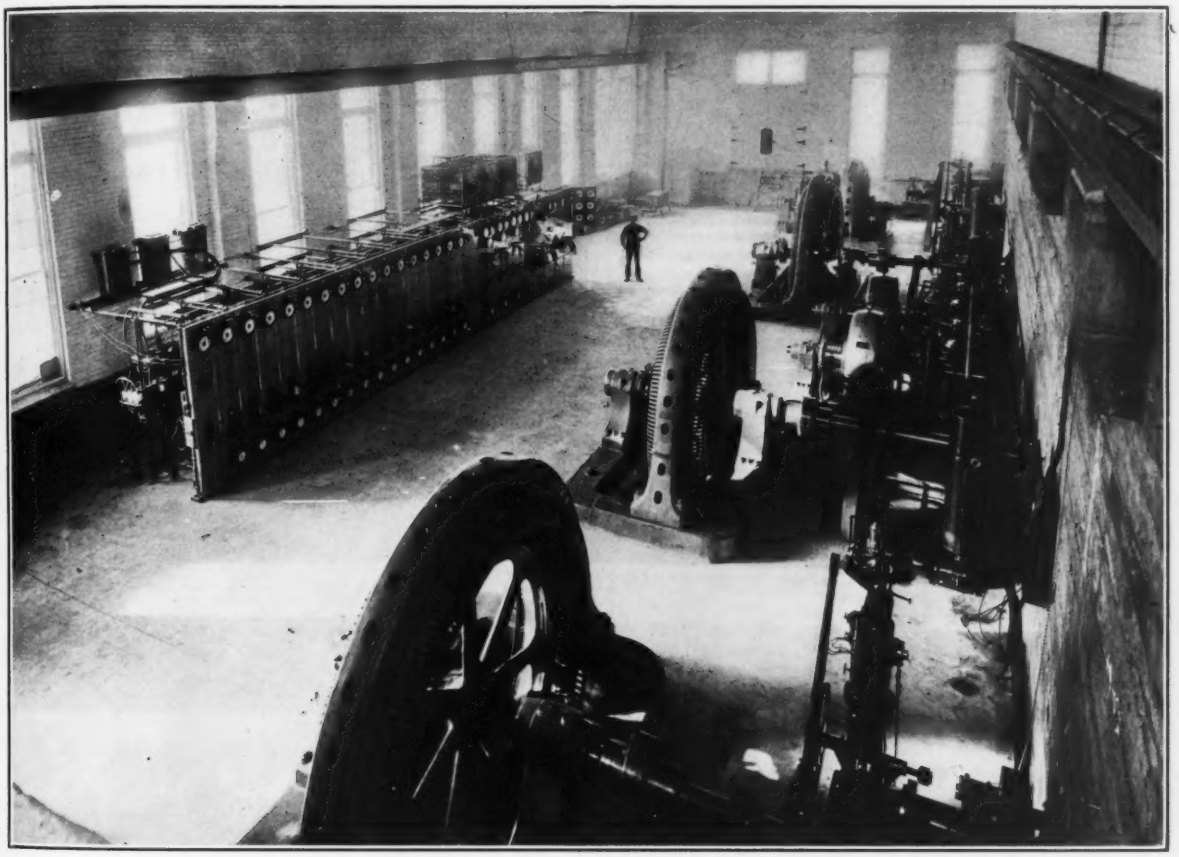
"The tendency of Asia to supply itself with goods heretofore imported is exemplified in the paper trade in China and other Asiatic countries. Paper has been manufactured in China for centuries, but little is suitable for modern uses. Finer grades of paper prepared in China and Japan under old processes cost so much that it is quite practicable to introduce foreign paper.

"Imports of paper in China, in spite of the immense amount produced locally, have been considerable, and the demand is so strong and steady that capital is being attracted to the manufacture of paper in the East. At present there are paper manufacturing enterprises of note from Japan to Java. In Japan an immense modern American equipped plant at Tomakimi, it is reported, will furnish more than half the present total consumption of book and news paper. [See account of this new mill in Daily Consular and Trade Reports for October 11, 1910.]

Demand for Pulp—Use of Millet.

"This and other mills are reaching out for pulp, and the importation of this material in Japan is becoming an important matter, the Japanese Government, through consuls and otherwise, aiding in investigations as to pulp supplies. Japanese manufacture pulp from millet stalk, one of the principal products of Manchuria, and the special cultivation of the plant for pulp purposes is reported as having been commenced near Tiehling. It is stated that 700,000 tons of kaoliang stalks, producing about 245,000 tons of pulp, can be obtained from Manchuria alone.

"There are several modern paper mills in China, but they are small and supply only limited local needs. A mill in Hongkong equipped with British machinery employs about 150 hands, uses what rags and waste are obtainable, and imports some pulp from Norway. It turns out about 250 tons of paper per month.



General View of the Power Plant of the Marathon Paper Mills Company, Rothschilds, Wis., Showing Generators, Motors and Switchboard.

New Mills Established.

"In Tonkin, Indo-China, a large new mill is expected to be in operation by June, 1911. It is being constructed for the Tonkin Paper and Pulp Company by a Scotch firm, which established the mill at Chinkiang, China. A fine new paper mill is to be started near Batavia, Java. Its output, for the present, will be confined to cardboard and packing paper. The promoters claim there is an immense supply of paper material in Java.

"Aside from the modern Japanese mill all these mills attempt the manufacture of little more than wrapping paper for local consumption. This trade is limited in China, for the coarser grades

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IMPORT TRADE AND SOURCES OF SUPPLY.

"For medium grades of paper there is some field, although sooner or later local mills will take care of all this business and probably will have a surplus product to export. With its modern and finely equipped mills Japan will have the greater portion of China's medium grade trade in the near future. Trade in imported paper amounts to but a fraction of what it will become as modern education and newspaper reading increase. The total annual value of all paper imports into China from 1905 to 1909, inclusive, amounted to $2,231,040, $3,250,730, $2,587,541, $2,364,003 and $2,443,231 for the respective years.

"In 1909 about 33 per cent. of this paper was imported through Hongkong, mostly from Great Britain and northern Europe. Japan sent a little more than one-fourth and Germany about one-eighth of the whole. Austria, Great Britain, Belgium and Sweden, in the order named, furnished the balance. The United States furnished less than 2 per cent. Shanghai takes about 22 per cent., Canton about 16 per cent., Tientsin about 12 per cent., Newchwang about 10 per cent. and the other ports a less proportion. The only foreign goods now imported through Hongkong in material quantity include brown and yellow packing papers, chromo papers and white printing papers for newspapers. The newspapers (English) use a fair quality of paper.

PRICES PAID FOR NEWS PAPER.

"According to size and quality they are paying $1.26 to $1.68 gold per ream of 500 sheets, packed in bales of 10 reams. Chinese newspapers use a cheaper line, paying from $0.95 to $1.26 gold. Some current sizes and weights are: English, 35 by 45 inches, about 52 pounds per ream of 500 sheets; Chinese, 31 by 43 inches, about 40 pounds per ream. In packing papers a great variety of qualities is imported, including cheap, rough, brown, wood papers; one side glazed brown and yellow papers; both sides glazed and expensive yellow and brown wrapping and label papers. Considerable business is done in white chromo papers used for printing Chinese wall calendars. A jobbing house in speaking of all these papers said its experience in handling American and Canadian papers proved that the main obstacle is, they are always much too dear, considering the quality.

"The extended manufacture of foreign grades of paper in Eastern countries indicates that unless there is an unexpected failure of materials it is only a matter of a short time until much of the present import trade in papers of such countries will be supplanted by papers of local or at least of Asiatic production. For many years, however, there will doubtless be a considerable and even increasing trade in better grades of paper in China."

FROM CANTON.

Writing from Canton on the subject of a commission to be appointed looking to the advancement of the industry, Consul General Leo Bergholz, of Canton, writes:

"The attention of the Chinese in this province has been called to what, from their point of view, is regarded as an unsatisfactory condition of the paper making industry. It has been pointed out to them that the increase in the number of newspapers and books published in the province has increased the demand for paper, but that the profits which should accrue to the Chinese from this increased demand for paper are going to foreign manufacturers. Little advance has been made in the use of machinery in the manufacture of paper in this district, and the local supply falls far short of the demand. A commission has been appointed to look into the matter and to decide whether modern machinery shall be introduced or the manufacture of paper be continued by hand labor."

WOOD PULP AND PAPERS IN JAPAN.

From Yokohoma Consul General Thomas Sammons writes:

"While the demand for wood pulp and paper is constantly increasing in Japan, the producing capacity of the country is also increasing. A plant which was opened this year (1910) in Hokkaido has a capacity of supplying nearly 50 per cent. of the total home demands. Thin Japanese printing paper, used in printing books, etc., only one side being used, finds a ready market here.

"Germany and Sweden continue to ship considerable quantities of wood pulp to Japan, and it remains to be determined by the success of wood pulp plants in the Empire whether importation from those countries and from the United States will increase.

IMPORTS OF PRINTING PAPER AND WOOD PULP.

"The following statement shows the imports of printing paper and wood pulp into Japan and the principal countries whence imported in 1907, 1908 and 1909:

Whence	—1907.—		—1908.—		—1909.—	
Imported.	Tons.	Value.	Tons.	Value.	Tons.	Value.
Printing Paper—						
Belgium	5,855	$448,121	4,525	$370,787	5,655	$409,931
United Kingdom	4,239	387,887	3,704	341,989	3,978	365,848
Germany	6,291	374,445	3,171	170,884	5,354	313,908
Sweden	1,803	98,357	1,443	73,039	3,621	183,353
United States	2,046	147,512	3,705	250,639	1,701	130,979
Norway	936	52,125	551	29,978	537	27,501
Austria-Hungary	2,194	152,017	353	22,539	330	19,368
All other countries.	673	36,275	184	9,886	400	28,163
Total	24,037	$1,696,739	17,636	$1,269,741	21,576	$1,479,051
Thin Japanese Printing Paper—						
Austria-Hungary	2,663	220,031	4,008	325,507	4,984	390,848
Sweden	602	46,611	459	34,393	1,853	135,868
Belgium	762	62,753	254	20,657	1,369	108,944
Germany	2,379	204,020	553	44,485	1,101	85,577
United Kingdom	62	4,578	40	3,212	67	5,439
All other countries.	31	2,802	9	680	72	5,954
Total	6,499	$540,795	5,323	$428,934	9,446	$732,620
Wood Pulp—						
Germany	12,403	$551,558	15,645	$684,081	12,377	$500,478
Sweden	1,581	77,440	2,407	111,537	4,749	193,719
Norway	922	38,727	455	19,182	853	30,666
United States	318	18,797	1,065	43,162	508	25,332
United Kingdom	626	33,928	339	14,328	469	17,843
Denmark	929	80,814	629	31,503	331	15,154
All other countries.	3,109	18,838	...	.....	21	74,929
Total	17,881	$820,102	20,540	$903,793	19,308	$794,121

New Additions to Northern Paper Mills.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., February 13, 1911.—The new 1910 addition of the Northern Paper Mills, Green Bay, consists of a machine room building 70x159 feet, two stories high, and a beater room 64x135 feet, three stories high. The buildings as well as machine foundations are all of concrete, with brick walls from window sills up. The floors throughout are of reinforced concrete, supported by steel columns. The roof consists of steel trusses covered with Washington fir planking and Burmite composition roofing.

The machinery equipment consists of one 132 inch Harper-Fourdrinier machine, built by the Sandy Hill Iron and Brass Works, of Hudson Falls, N. Y. Four 1,000 pound Horne beating engines, two direct connected motor driven Jordans, built by the Union Machine Company, of Fitchburg, Mass. A 6 ton traveling crane extends the entire length and width of the machine room.

The new paper machine makes the third in operation at the Northern plant, and ample room is left in the buildings erected during the past summer for the installation of a fourth machine. Each of the paper machines is driven by steam engines. The pumps, beaters, Jordans, cutters and elevators are all driven electrically by electric motors manufactured by the Wagner Electric Manufacturing Company, of East St. Louis. The equipment throughout is of the very best and strictly up to date in every respect. It is planned to operate the machines almost exclusively on tissues and light weight book papers. FOX RIVER.

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CANADIANS ENJOYED A GOOD YEAR

Both the Ontario and Quebec Mills Did a Good Business in 1910 —The Incorporation of Many New Paper and Pulp Making Companies Seems to Indicate Great Things to Come

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Canada, February 13, 1911.—When the Province of Ontario placed legislation in force prohibiting the export of pulp wood from Crown lands there were voices in the land predicting a dire state of affairs as a result of such "high handed" interference with what had been a convenient and profitable practice of the Canadian pulp traders and the United States pulp and paper mills. But the Ontario Government did not worry much over it. Sentiment in political and popular circles throughout this country was behind the measures.

MANY NEW CANADIAN COMPANIES INCORPORATED

Perhaps the best illustration of what the prohibition of pulp wood export has done for Canada is hinted at in the incorporation only a few weeks ago of the Grand Falls Company, Ltd., of Grand Falls, N. B. The incorporators include Sir William Van Horne and George F. Underwood, recently a vice president of the International Paper Company. The name of the latter in the new Canadian company is taken by paper men here to mean that the international Paper Company is in the Canadian field "for keeps" and intends to construct a number of paper mills as opportunity offers. The Grand Falls Company has a capital of $1,200,000.

It is felt that the restriction on pulp wood export stands behind the organization of Price Brothers at Jonquiere, Que.; the Spanish River Pulp and Paper Company, of Spanish River, Ont.; the Lake Superior Corporation, Sault Ste. Marie, Ont.; the Sierra Madre Pulp and Paper Company, of Toronto, just incorporated at $5,000,000 capital; a new mill of the Minnesota & Ontario Power Company, Fort Frances, and the Mackenzie & Mann corporation at Grand View Falls, in the Lake St. John (Quebec) dictrict, known as the Canadian Paper and Pulp Company.

These are all important concerns, with capitalizations that would total about $11,000,000, and a capacity of about 1,100 tons of news a day. If, as is understood to be the fact, the United States consumption is at the rate of 5,000 tons a day, the new Canadian companies will cut an important figure in the international supply.

NEW MILLS WILL EXPORT THEIR PRODUCTS.

As may be supposed, the new mills which have come into existence owing to the impetus given by the new laws of Ontario and Quebec, are in the field for export trade. Canada naturally is unable to take care of such an enormous output, hence nearly all of it will go to customers south of the border. Of the dozen mills outlined in prospectuses not more than half are in extraordinary haste to get their buildings up and their plants in operation, although those mentioned above are apparently incorporated for immediate undertakings. Some of the veteran pulp and paper men of the province are pointing a finger of alarm to the haste of promoters to get new concerns incorporated, and declare that difficulty will be found in disposing of their stock, despite the roseate and indeed legitimate assurance that the consumption of paper in the United States and Canada is increasing at the rate of 10 per cent. annually. It is alleged, too, that the present development work is being done by men who are not familiar with the practical details of the paper making business. "It is one thing to sell the stocks and bonds of a new paper business," said an experienced mill owner, "but quite another thing to earn dividends on them."

LARGE PULP WOOD EXPORTS FROM SETTLERS' LANDS.

An interesting phase of the export of pulp wood to the United States has recently come to light through statistics of the Trade and Commerce Department of the Federal Government at Ottawa. It appears that settlers in districts bearing pulp wood are exempt from any provincial restrictions regarding export, and may send where and in what quantities they please the wood found within their acreage. Such source, although reaching the total of $984,000 worth of pulp wood in the one month of August last, shipped out of the country despite provincial enactments, is sooner or later exhausted, and fluctuates considerably. In the interval between March 1 and August 31, 1910, settlers shipped to the United States approximately $3,400,000 worth of logs. For the same period the value of all manufactured paper exported south of the border was $1,600,000, which was $600,000 better than the five months of the year before.

It is interesting to note, too, how the business between Canada and Great Britain in paper has thinned out with every twelvemonth. Two years ago the Mother Country bought from us about $1,000,000 worth of paper. Since that time the increase in volume has been steady and will likely continue.

ONTARIO MILLS DOING A GOOD BUSINESS.

As for the condition of Ontario mills, reports gathered by your correspondent from week to week have shown a uniformly healthy and hopeful state of the paper business. We have now centred in Toronto the heads or sales offices of dozens of news, book, wrapping and other mills, with an aggressive representation of the ground wood manufacturers. The latter are at present kept well stocked with orders, and nearly all the Canadian pulp mills are having little trouble in disposing of their output at from $22.50 to $25 a ton. Good fortune waits upon pulp men here at many months of the year when drought affects the water supply of the mills in the Middle Western States or through New York and New England. Up to the close of the year the book mills were unanimous in reporting steady business for the twelve months closed, and nearly all of them appear to have prospered. Their annual reports gave good cause for optimism. Nothing more need be said for the news print makers beyond that they have a constantly increasing market, with no recent setbacks, and prices that are stable and satisfactory. For many weary months the wrapping men throughout the province wrangled and complained and cut throats in the most disagreeable fashion, sending prices of manilas, fibres, paper bags and krafts down into the dumps. It was fierce and destructive while it lasted. Though many attempts were made to get the factions together it was only toward the close of the year that an arrangement was struck whereby the beggarly cut rates were restored to their former basis, and the chance of a repetition temporarily abolished. So that, taken as a whole, the close of the year finds the Ontario pulp and paper men in all lines well pleased with the progress of affairs.

L.

The Greatest Year in Ottawa's History.

[FROM OUR REGULAR CORRESPONDENT.]

OTTAWA, Canada, February 12, 1911.—The year 1910 was the greatest in Ottawa's history in respect to the growth of the paper industry.

THE CONTINENTAL MAKING BAGS IN CANADA.

Of first importance was the erection of a plant by the Continental Bag and Paper Company with a capacity of 3,000,000 bags a day. The company is capitalized at $500,000. It is very closely related to the concern of the same name in New York. Herman Elsas, president, and I. Kuhe, secretary, of the New York company, are directors of the Canadian board. The others comprising the Canadian directorate are J. Fred Booth and William Anderson, two managers of the big J. R. Booth paper business; J. B. Hennessy (president), W. H. Dwyer (managing director) and H. K. Egan, a wealthy lumberman.

It is presumed that a well known American expert will take charge of the plant when the organization of the staff is complete. The building, which is three stories high, 80x210 feet, is constructed so as to receive three more stories with the development of the industry. Individual motors will drive the machinery. The Grand Trunk Railway Company has built a spur line into the

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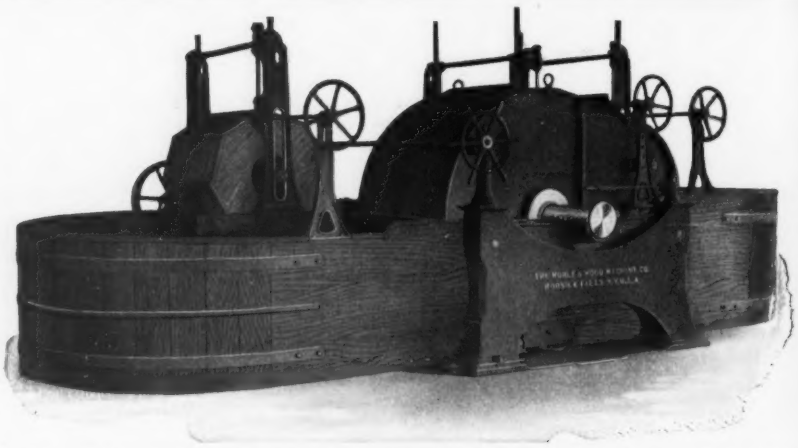

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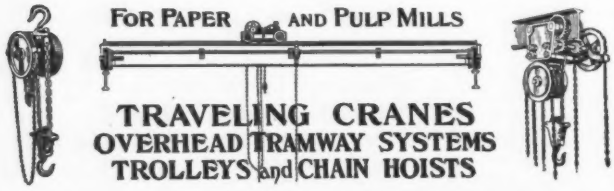

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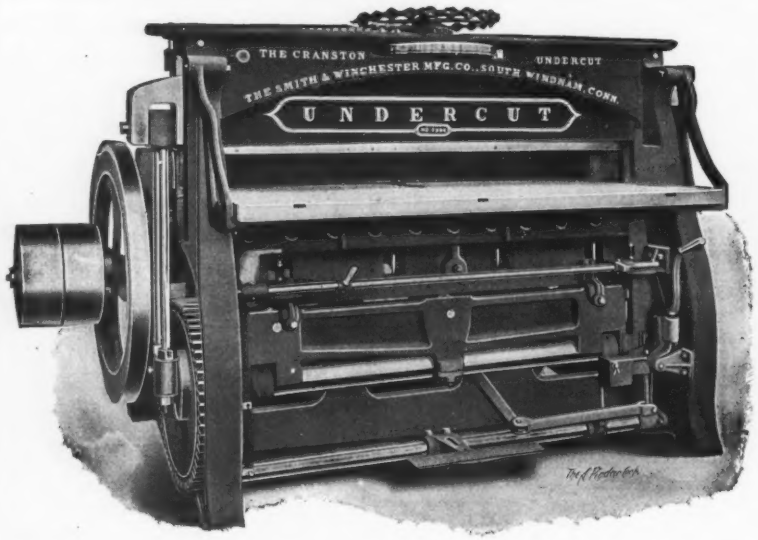

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The Cutter that clamps the stock securely and cuts every sheet accurately. **WHY?** Because the construction is such that the resistance against the knife in cutting is expended in pressing the clamp more firmly on the stock which is being cut, holding it firm and not allowing it to draw as with most Cutters. It is the strongest Cutter made.

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Builders of High Grade
Paper Mill Machinery and Paper Bag Machinery,
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A Satisfactory Screen and Pump Drive

These sliver and plate screens are operated by a 30 H. P. General Electric motor. This motor is controlled by oil switch shown on wall. Wiring subject to splashing is enclosed in metal conduit.

The adoption of

General Electric Motor Drive

throughout has resulted in a greatly increased production of evener weight paper, and has greatly reduced shrinkage in this mill. This is largely due to the smoother motion, and the fact that belt slippage is almost entirely eliminated. There are no long line shafts to eat up valuable power, and reduce production or consume power when screens are not operating.

Paper mill drives as recommended by the General Electric Company are best because they represent years of careful study by men who have installed electric drive in many of the largest paper mills in this country. The records of every one of these installations are before these experts when *your* drive problem is considered. This is an important fact to remember—*for an engineer's advice to you is valuable only as it represents specialized experience.*

Write our paper mill experts for advice on your drive problem. Any question which you may wish to ask on this subject will be carefully answered without obligation to you.

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Daily Capacity: 1,000 Cases

Carload shipments from Kaukauna, Wis., to all western and southern points at low rates of freight.

Eastern and central shipments from Hinsdale, N. H

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factory yards, and shipping facilities, means of obtaining labor, etc., are very favorable.

To some it looks like a bold undertaking to turn out so many bags on an apparently well supplied market, for less than a mile away the long established E. B. Eddy Company is producing bags in millions also, and there are other active rivals for the trade. One of the Continental directors told the representative of THE PAPER TRADE JOURNAL that it was too soon until their product was on the market to discuss marketing problems, but he averred that the prospect was by no means gloomy. Mr. Booth, the vice president, had the experience, only a couple of years ago, of finding an outlet for 100 tons of news a day from a new mill. It will be well into February before the Continental Company invades the paper bag market.

BOOTH KEEPS ON ADDING TO HIS PLANT.

Early in the year J. R. Booth began operations in a new board mill, producing some 40 tons a day. He added to his pulp mills and constructed a modern concrete boiler house as an adjunct to his news print factory.

The Beaver Board Company, of Buffalo, has been making its product in rented quarters nearly all year pending the erection of a factory on a site purchased in the outskirts of the city of Ottawa. Several of Ottawa's leading industrial men are behind this enterprise, and it promises to receive a large local patronage from builders. Similar raw material is shipped from Ottawa to a company at Rouse's Point, N. Y., and that plant, it is understood, will shortly be removed to Ottawa. The E. B. Eddy Company's impervious sheathing is one of its newest products, and the manufacture of that brand of pulp board during the last year increased in proportion to the expanse in building in the many centres of Canada where the sheathing finds its way.

The St. Lawrence Pulp and Paper Company, of Ottawa, installed two new twelve plate screens to keep pace with orders for mill board and container board made from sulphite screenings. The output of this new enterprise is now 8 tons per day. Some new companies have recently been formed to make cases and containers out of the St. Lawrence Company's board.

The Stronglite Paper Box Company established a factory on Sparks street, Ottawa, and with a fibre mill board purchased locally turns out a convenient packing box. The board is bought in sheets, 26x76 inches, and from .060 to 0.90 inches thick. The boxes are made on wooden frames, and vary in size, carrying from 25 to 250 pounds. G.

New National Paper Company of Syracuse

The New National Paper Company, of Syracuse, N. Y., which was recently incorporated at Albany with a capitalization of $25,000, elected the following officers: President, William Barber; vice president, George E. Thorpe; secretary and treasurer, William H. Flaxington. The company will take over the business of the Cataract Paper Company, with which the president and secretary of the new company were identified. It will do a manufacturing and jobbing business.

Mr. Barber has been connected for a number of years with the paper business, in both manufacturing and jobbing, and enjoys a wide acquaintance among the trade and mills which, with his active service, will add materially to the interest of the concern, as will Mr. Flaxington's connection, having for the past five years been associated with the Cataract Paper Company, Syracuse, N. Y. Prior to that he was with the Carthage Tissue Paper Mills, of Carthage, N. Y., for some eight years.

George E. Thorpe, though having little direct experience in the line, is well regarded as a successful business man, and with his financial aid will add to the credit of the new firm. The company, which starts with an old established business, has also an experienced force of capable salesmen. It is well located in attractive quarters at 362 West Fayette street.

The Year Satisfactory for Canadian Manufacturers.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Canada, February 12, 1911.—In an interview with one of the most prominent paper manufacturers in this province a discussion of price changes during the year was made. His conclusions were that there had been a general advance in all lines of pulp and paper throughout the year. The only commodity to show any lowering in value was ground wood. This was a temporary condition which prevailed during the summer months only, and was caused by the ground wood mills on the lower St. Lawrence shipping pulp to the interior instead of sending it to Europe, as has been the usual custom. Some 15,000 tons were sent into the interior of Canada. Now that this cannot come in owing to navigation having closed prices have risen, and are higher than they were a year ago. In many cases the mills in Canada have not only sold out their stocks, but have also disposed of their output for months to come. One mill has sold its entire output until next June. R.

Gathering Paper Stock in Paris

On the streets of Paris they enforce neatness almost as they do on the streets of the Netherlands, and, as a result, the gay metropolis has a force of men who make a business of going about, armed with long-handled forks, with which they pick up whatever fragment of paper may be laying on the streets. The men have a little push cart, urging a "clean Paris," and asking that one do not throw things on the street. The photo is by the International Press Photo. Company.

Import and Export Statistics

[FROM OUR REGULAR CORRESPONDENT.]

OTTAWA, Canada, February 13, 1911.—Dr. Eugene Paquet, Conservative member for l'Islet, Que., is looking into the pulp and paper trade between Canada and the United States. At his request the following statement was tabled in the House of Commons: Pulp wood exported, 1909, $4,356,391; 1910, $6,076,628. Wood pulp, 1909, $4,306,920; 1910, $5,204,597. Paper, 1909, $958,870; 1910, $1,297,052.

Importations: Printing paper, 1909, $195,580; 1910, $234,780. Ruled, bordered and coated paper, boxed papers and papeteries, 1909, $61,112; 1910, $99,943. Papers (all kinds, n. o. p.), 1909, $633,259; 1910, $927,190. Wall paper, 1909, $154,819; 1910, $206,662. Wrapping paper, 1909, $52,465; 1910, $58,102. G.

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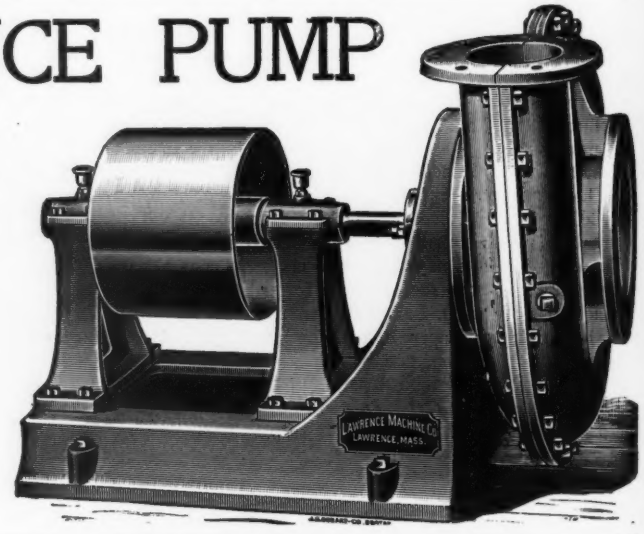

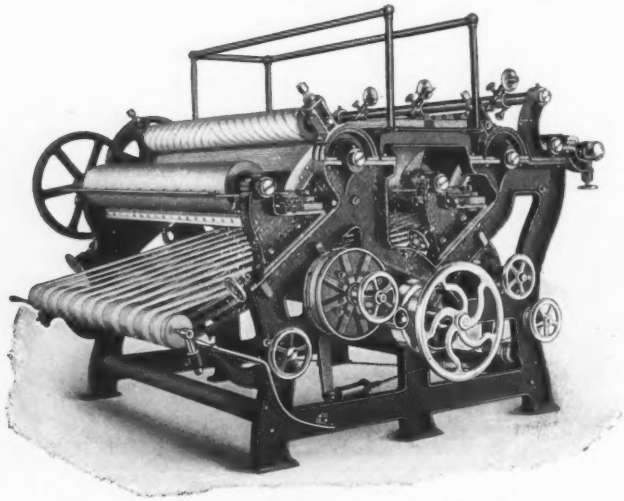

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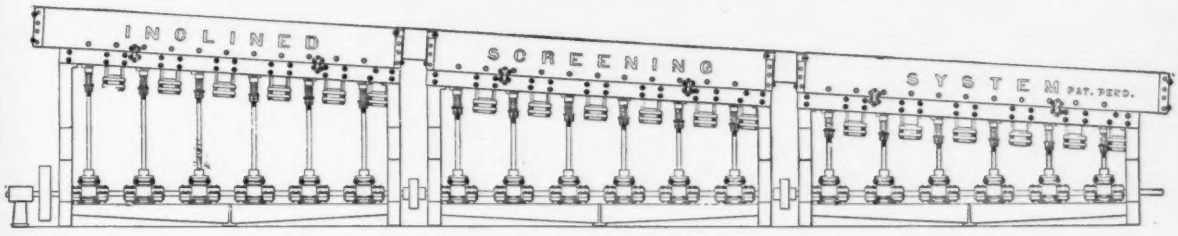

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Let us send you samples and full particulars.

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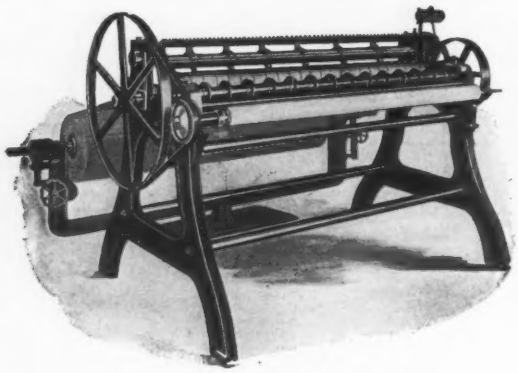

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Correspondence solicited.

DIETZ MACHINE WORKS, Mfrs., Philadelphia, Pa.
126-128 FONTAIN STREET
Corner Waterloo Street, Below Diamond Street, Between Front and Second Streets

New Chicago Paper Warehouses.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, February 13, 1911.—The new warehouse of Hollis & Duncan is located at 724-32 Lake street. The building is seven stories and basement. It has a frontage of 90 feet on Lake street and extends back 185 feet to Lydia street, so that it has the advantage of being located on two streets instead of a street and alley. The entire building is occupied by the firm, which is a large jobber of wrapping paper and twine and an extensive manufacturer of paper bags and knock-down boxes. The engine and boiler room are located in the basement, the balance of the space being used for storage of stock. The offices and shipping department are on the first floor, the balance of the space being utilized for stock. The other floors are used by the manufacturing departments and for additional storage space.

This firm has been in business in Chicago since 1880. For many years it was located on South Water street. The present new quarters were completed April last, and were occupied April 15 of this year.

CHICAGO PAPER COMPANY TO HAVE NEW BUILDING.

The Chicago Paper Company, now located on Monroe street, near the river, will by the end of this year (1911) have quarters in one of the handsomest new buildings in Chicago, which will be

erected for them by the Marshall Field estate at the corner of Polk street and Fifth avenue. Designs for the new structure were prepared by the well known firm of architects, Burnham & Co. The building will have a frontage of 140 feet on Fifth avenue by 102 feet on Polk street. It will have ten stories and basement. There will be light on three sides to the seventh floor, and above that light on all four sides. It will be fireproof throughout and of reinforced concerte and steel construction.

The engine and boiler room will be located in the basement and the balance of the space will be used for storage purposes. The offices and shipping room will be on the first floor. On the second floor the ruling room will have its quarters, and the balance of the floor space used by the company will be devoted to stock storage purposes.

On the first floor a wagon concourse is provided, and steel roller shutters run down from above to the platform edge for the protection of the stock which may be on the platform over night. There will be two passenger and two freight elevators and a dumb waiter to the second floor. Every facility is provided for the comfort and convenience of the occupants and to facilitate the handling of stock.

The building is to be completed and ready for occupancy December 31, 1911, and as will be seen by the cut it is certain to be one of the handsomest and most convenient paper warehouses in the country.

DWIGHT BROTHERS WILL OCCUPY NEW WAREHOUSE OCTOBER 1.

The new building of the Dwight Brothers Paper Company under construction on South Clark street, five stories of which will be occupied by the firm for its own business, will be, when completed, one of the largest and most convenient paper houses in the city. The new building will be 126x100 feet, and will be constructed especially with the aim of facilitating the dispatch of business.

The new building will be ten stories in height, and the foundations rest on caissons placed at a depth of 105 feet below the street level. The construction will be of steel and reinforced concrete and fireproof throughout. A driveway is left at the south side and a cut-in of 16 feet wide is provided in the rear of the first story to facilitate the handling of stock.

When ready for occupancy, which will be about October 1 next, the new building will present a handsome, substantial appearance, and will be as complete and convenient for the purpose intended as it is possible for a place to be. The transportation facilities are excellent, and its location in the heart of the large printing centre of the city makes it ideal for the business for which it is intended. THOMPSON.

New Home for Northwestern Paper Stock Company

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, February 13, 1911.—For the third time in three years the Northwestern Paper Stock Company has been compelled to lease new quarters. This has been rendered necessary by the increase of their business. The company has entered into a twelve year lease for the large, modern warehouse, 1520 to 1534 Johnson street, and will vacate their old quarters at 188 Federal street and move into the new warehouse soon. The lease is made for a term rental of $80,000.

The new quarters are admirably adapted to the business of the company. The building is of modern construction, and has private track connection with the Baltimore & Ohio, the Chicago Terminal and the Chicago & North Western railways.

The management of the Northwestern Paper Stock Company is in the hands of Morris Pushker, a typical Chicago business man, who has had large experience in the paper stock business. He is to be congratulated on this evidence of the substantial growth and prosperity of the business. THOMPSON.

Government Purchases of Mill Board

[FROM OUR REGULAR CORRESPONDENT.]

OTTAWA, Canada, February 13, 1911.—An order for 17 tons of mill board for the Government Printing Bureau was purchased recently at $45 per ton. Tenders were called for and the offer, which was accepted, came from the St. Lawrence Pulp and Paper Company. About half a ton became warped, and was replaced by the company without cost.

Hon. Charles Murphy, Secretary of State, replying to a question in the House of Commons, said it was not a fact that the bureau had purchased paper "culls." Various grades of paper required for different services are purchased under contract, but in order to give all dealers and manufacturers an equal chance to compete, registered watermarks or trademarks are not specified in the invitation to tender. Employees in the bureau have sufficient experience to enable them to distinguish "culls," and the results of their investigations have been that the papers purchased are of good quality and value. All papers are examined and tested when received at the bureau.

S. P. Grant, who for several years was assistant King's printer of Ontario, has been appointed to organize and direct the purchasing department. He will also have charge of all printing, etc., done outside the bureau for the Government. G.

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THAT MADE "KRAFT PAPERS" SUCCESSFUL

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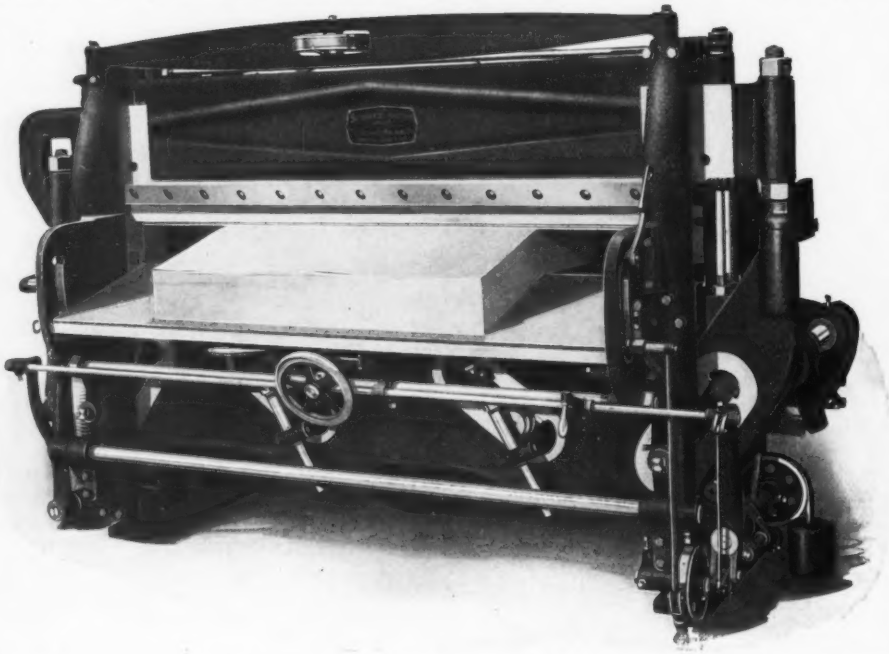
The Seybold 20 Century Automatic Drop Table Cutter



Will cut a *higher* pile of stock *more accurately*—with *greater rapidity*—with *less* clamping pressure—and the knife will do *twice* the volume of work *without sharpening, than can be done by any other method.*

Let us send full particulars, list of users and our little booklet Testimony.

The cut shows position of table and stock while machine is cutting.

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PAPER CONDITIONS IN ENGLAND

Volume of Trade Holds Up—Handsome Profits Shown by Three Companies—Demand for Hand Made Paper and for Piano Records—Trade With Foreign Markets

[FROM OUR REGULAR CORRESPONDENT.]

LONDON, ENG., Feb. 4, 1911.—Although many people connected with the paper making industry in the United Kingdom have been saying that trade has been bad and never worse, their complaints are not borne out by the annual statements of the various paper-making concerns which show as much business as ever in the past year, and perhaps a little more. Many firms have simply kept up their returns, but others report a substantial increase in their turnover. On the whole, the quantity of paper turned out from the English mills has been greater than ever, and as far as "news" is concerned there have been plenty of occasions where the makers have had to refuse orders for goods required for quick delivery. For the cheaper classes of white printings, and super calendered papers the demand has been sufficient throughout the past year to keep the mills profitably going from the commencement, while the makers of better class publication papers, such as imitation arts, have had plenty of work and commenced the year with a full month's orders in hand. Under the circumstances it is not anticipated that there will be much change in the prices that have ruled for the last six months. These stand at a fair average, and rather favor the buyer. The sitution is very well indicted in the annual balance sheets of three paper-making companies which have been submitted since my last letter.

SHOW SUBSTANTIAL EARNINGS.

The East Lancashire Co., which has capital of £105,000, comprising 5,000 ordinary shares of £10 each, and 6,176 bonus shares of £5 each, have been able to declare a dividend of 10/ per share and a bonus of 5/ per share on the ordinary and preference shares, and 2/6 per share on the bonus shares. The net profit for the whole year has been £21,211 as against £13,592 in 1909, while machinery has been written down to £138,159 from £222,967, and the reserve fund amounts to £30,000. The Ramsbottom Paper Mill reports a dividend increased from 10 to 15 per cent., while the trading profit has enormously increased from £2,594 in 1908, to £4,344 in 1909, and to £6,518 in 1910. The North of Ireland Paper Co., with a capital of £100,000 in 20,000 shares of £5 each, is able to show a profit of £12,071 and pay a dividend of 10 per cent. for the half year, accompanied by a bonus of 2½ per cent. per annum, while bringing forward the large balance of £58,852. These instances, together with an equally satisfactory state of affairs in regard to other companies, as quoted in previous letters, show that there is not much ground for complaints as to the present position of the British paper-making industry.

HAND-MADE PAPER.

As regards hand-made paper some interesting references to the progress of this industry were made recently at an annual social gathering in connection with the Hayle mills in Kent, which turn out a large proportion of this class of paper. It was stated that a severe blow was given to the hand-made industry when the Government Stationary office adopted "mould-made" papers. There is still, however, a large demand for hand-made paper, especially for account books, and this demand has led to the output of considerable quantities of imitation hand-made paper with fraudulent wate or wire marks. It was said that hand-made paper cannot be so counterfeited as to deceive the expert, who has several means of testing the genuineness of the watermark. The best test, a recent authority on this side says, is to hold the genuine article horizontally with a strong light in front and with the eye placed on a level with the sheet. The paper will then appear to have inequalities of surface which really do not exist, and which are never seen when the mould-made article is treated in the same fashion. Another test for hand-made paper is that when a sheet is doubled down the crease can be pressed out again with the thumb, and will present no difficulty when it has to be written over.

Your correspondent has had his attention called to the increasing demand for paper for mechanical piano players. The manufacture of paper records for this purpose is largely in the hands of one London firm, and those outside the trade would be astonished at the annual output of this material. When the perforated rolls were first produced they were formed of ordinary paper with no special provision to ensure durability, and with constant handling the records soon grew soft and inefficient. Special attention is now given to the quality of the paper used because the slightest deviation in thickness prevents the necessary air entering and the notes which should "speak" remain silent, or vice versa. To prevent damage in handling, the outside paper of the roll is now fitted with a patent linen front. The makers of the perforated sheets use only a selected stock, and have a specially strong moisture-resisting paper. Before use it is severely tried in a paper-testing machine specially designed to ascertain that it is unaffected by change of climate. Another process peculiar to the industry is that of perforating this paper, for which machines are used which prevent all possibility of raggedness on either side of the perforation.

IMPORTS OF ESPARTO.

In regard to our imports of esparto last year it is reported by the shippers that the total amount was 4,000 tons less than in 1909. This was the result of the greatly diminished supplies from Tunis, but increased imports from other sources would have brought the figures almost level with 1909, but for the destruction by fire of a shipment from Sfax when within three days of its destination. Of the year's supply 69 per cent. or 134,483 tons was taken by Scotland, an increase of 7,379 tons. Market values have undergone very little change during the twelve months, but there has been a tendency towards lower levels, most pronounced in the case of Spanish and African esparto. There is a growing disposition on the part of British buyers to make long forward contracts for this article.

REVIEW OF FOREIGN TRADE.

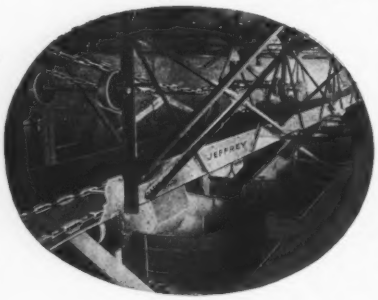
A review of the foreign markets as afforded by British Consular reports shows that Italy has enormously increased its local consumption of paper and the importation of raw material has trebled in value since 1900; last year amounting to about £650,000. Austria-Hungary, Germany and France are the principal suppliers. The Italian paper mills have during the last 30 years been entirely transformed into up-to-date establishments and the output from them in 1909 was 1,407 tons. Bolivia is pointed out by the British Consul as a promising market for paper materials. At present it is stated the demand is met with French or Dutch paper which is often made with imitation British water marks. There is always a good market for printing paper in the Argentina (says the Consul), in spite of the heavy customs duty. The paper which is produced in the Republic leaves much to be desired and the principal newspapers use the best European paper.

Switzerland is another market to which the attention of British paper makers is directed. It is pointed out that our supplies to Switzerland bear poor comparison with those of Germany and France, and could be increased. Paper articles imported from the United Kingdom compare in value as £33,000 against Germany's £980,000 and France's £234,000.

NEW FORESTRY ASSOCIATION FOR ENGLAND.

A meeting has been held in London at which it was decided to form an English Forestry Association. The object of the Association is to reorganize the market and to encourage the use of and the demand for English timber. Lord Clinton, who was elected President, said that there was in this country a lower percentage of land under timber than in the rest of Europe.

Jeffrey Conveyers for Pulp and Paper Mills



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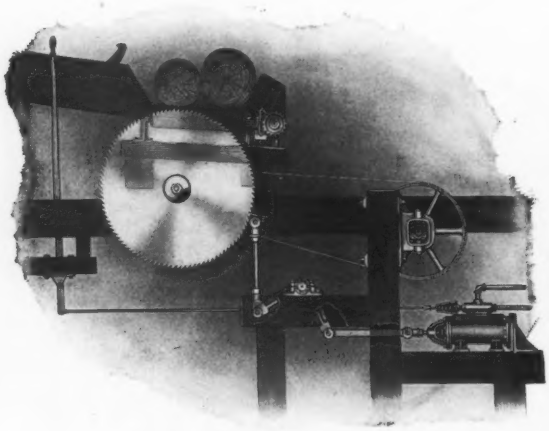
New York

WOOD ROOM MACHINERY



STEAM FEED UNDER-CUT SWING SAW.

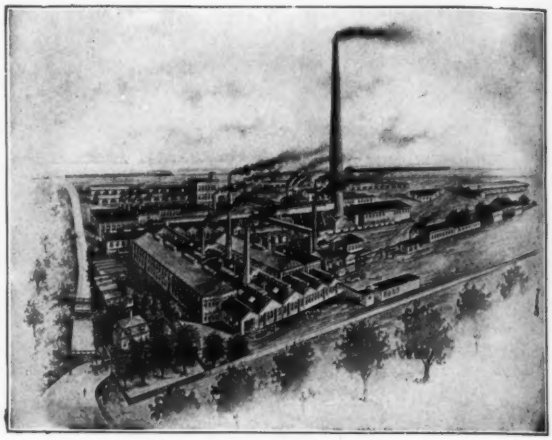
Slashers, Single, Double and Multiple Saws, Swing Saws, Conveyors and General Wood Room Machinery for Pulp and Paper Mills Balanced Shaker Chip Screens.

Ryther & Pringle Co.

Write for Circular. CARTHAGE, N. Y.

The Heller & Merz Co.

NEW YORK



WORKS: NEWARK, N. J.

BRANCHES: CHICAGO, PHILADELPHIA, BOSTON

Manufacturers of Aniline Colors

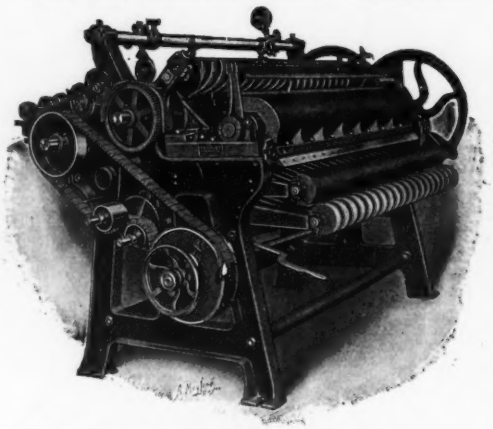
Colors for Paper Makers' Use

OUR SPECIALTY

SPECIAL SHADES MATCHED

PAPER CUTTERS

Single, Duplex and Diagonal



CUTTER KNIVES

Patent Top Slitters

Hamblet Machine Co.

Lawrence, Mass.

COATED CARD AND BOARD CUSTOMS

For the Purpose of Correcting Long Existing Trade Abuses a Number of the Manufacturers in Each Line Have Adopted Uniform Customs in Regard to Sizes, Colors, Quantities, Etc.

The following trade customs for coated cardboards have recently been adopted by the Bryant Paper Company, of Kalamazoo, Mich.; the Champion Coated Paper Company, of Hamilton, Ohio; the Riverview Coated Paper Company, of Kalamazoo, Mich.; the Otsego Coated Paper Company, of Otsego, Mich.; the Wabash Coating Mills, of Wabash, Ind.; the American Coating Mills, Elkhart, Ind., and the Niagara Coated Paper Company, of Niagara Falls, N. Y.:

Terms, Etc., on Coated Cardboard

1. Terms of all sales to be on basis of cash at any time within thirty days from average date of invoice, less discount not to exceed 3 per cent.
2. The standard thickness of the various plies is as follows:

COATED BLANKS.		TOUGH CHECK.		TRANSLUCENT.
3 ply	.015	3 ply	.012	.010 to .020
4 ply	.018	4 ply	.018	
5 ply	.021	6 ply	.024	
6 ply	.024	8 ply	.030	
8 ply	.030			RAILROADS.
10 ply	.040			4 ply .018
12 ply	.044	THICK CHINA.		6 ply .024
14 ply	.048	.011		8 ply .030

3. Regular sizes of cardboard—
   Blanks, 22x28 and 28x44.
   Post card and translucent, 22x28 and 22½x28½, or double these sizes.
   Railroad, tough check and thick china, 22x28.
4. Minimum quantity for odd sizes at regular base price as follows:
   Blanks, tough checks and railroads, 3 to 6 ply, equivalent to 10 M. sheets, 22x28.
   Blanks, tough checks and railroads, 8 ply and heavier, equivalent to 15 M. sheets, 22x28.
   Translucent, post card and thick china, equivalent to 10 M. sheets, 22x28.
5. Additional charges for odd sizes to be added to base price as follows:
   Blanks, tough checks and railroads—3, 4, 5 and 6 ply, equivalent to less than 10 M. sheets, 22x28, add 10 per cent.; 8, 10, 12 and 14 ply, equivalent to less than 10 M. sheets, 22x28, add 20 per cent.
   Translucent, post card and thick china, for less than the equivalent of 10 M. sheets, 22x28, add 10 per cent.
   No orders for odd sizes accepted for less than 5 M. sheets of any one size.
6. Odd size orders shall be subject to overruns, as follows:
   5 M. to 10 M. sheets of size ordered, 20 per cent. of quantity ordered.
   Over 10 M. and up to 20 M. of size ordered, 15 per cent. of quantity ordered.
   Over 20 M. and up to 30 M. of size ordered, 10 per cent. of quantity ordered.
   30 M. sheets and upwards of size ordered, 7½ per cent. of quantity ordered.
7. A variation of not more than one point above or below the ordered thickness in 3, 4 and 5 ply, or any board of less than .024 points in thickness; two points in 6, 8 and 10 ply, and above 10 ply, 5 per cent. shall constitute a good delivery.
8. An additional charge of not less than 3 cents per package will be made for sealing other than 22x28 and 22½x28½.
9. The charge for each extra coating to be added to the price of single coated one side as follows:
   Single coated, two sides, add $2 per M. sheets, 22x28.
   Double coated, one side, add $2 per M. sheets, 22x28.
   Double coated face, single coated back, add $5 per M. sheets, 22x28.
   Double coated, two sides, add $8 per M. sheets, 22x28.
10. Tints other than white on blanks, post cards and translucent, 50 cents per 1,000 sheets, 22x28, additional for each side coated.
    Prices for colors in deep shades quoted on application.
11. No waste to be returned, or board taken back, unless damaged before delivery. No claim allowed if board is cut, printed or lithographed.
12. Customer to make claim for damaged paper must report immediately to the manufacturer in order that goods may be inspected before printed or cut.

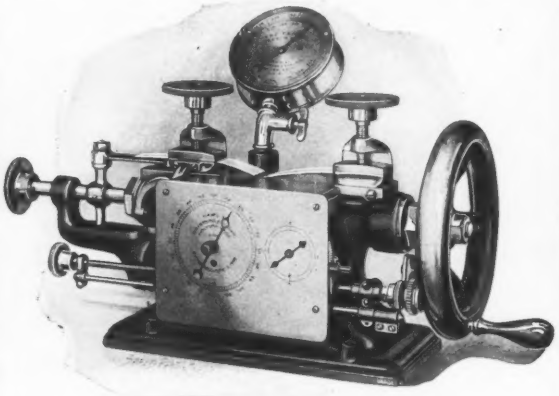
Clay Coated Box Board

The following trade customs for coated box boards have been adopted by the Niagara Coated Paper Company, of Niagara Falls, N. Y.; the American Coating Mills, of Elkhart, Ind., and the Wabash Coating Mills, of Wabash, Ind.:

Trade Terms on Clay Coated

1. Terms of all sales to be on basis of cash at any time within thirty days from average date of invoice, less a discount not to exceed 3 per cent.
2. Standard colors are as follows:
   White, yellow, chocolate, salmon, light blue, dark blue, pink, light green, dark green, red, orange, cardinal.
3. The regular size and thickness for coated box board is 28x44, .016 points.
4. One ton is the minimum quantity for odd sizes, other than 28x44 or sheets cut from 28 inch width rolls.
5. A variation of not more than one point above or below the ordered weight shall constitute a good delivery.
6. Orders for sizes and colors other than regular shall be subject to overruns as follows:
   1 ton to 10,000 sheets in size ordered, 20 per cent. of quantity ordered.
   Over 10 M. and up to 20 M. sheets in size ordered, 15 per cent. of quantity ordered.
   Over 20 M. and up to 30 M. sheets in size ordered, 10 per cent. of quantity ordered.
   Over 30 M. sheets and upwards in size ordered, 7½ per cent. of quantity ordered.
7. Extra charges to be as follows, basis 1,000 sheets, 28x44: added to price of single coated, one side:
   White double coated, one side, $4.
   White double coated, two sides, $14.
   White double coated face, single coated back, $10.
   White single coated, two sides, $6.
   Cardinal, maroon and other dark colors, each side, $3.
   Brush finish, each side, $2.
   Waterproof coating, each side, $4.
   Export cases, 2½ per cent.
   Trimming one side and one end, 3 per cent.
   Trimming all four sides, 5 per cent.
8. Customers to make claim for damaged board must report immediately to the manufacturer in order that goods may be inspected before printed, cut or made into boxes.
9. No waste to be returned, or board taken back, unless damaged before delivery.
10. No allowance made for board cut, printed or made into boxes.

The Perkins Improved PAPER STRETCH TESTER



Measures the breaking strength of a strip of paper in actual pounds, and at the same time registers on a dial the amount of stretch in hundredths of an inch.

Write for Special Circular and References.

B. F. PERKINS & SON, Inc., Holyoke, Mass.

THE

EDDY PAPER TESTER

Height 2½ inches
Width—Top 2⅛ in. Bottom 1⅞ in.

(Improved)
Patented Nov. 8, 1910
(Other patents pending)

How many times could YOU have used this little instrument to advantage in the past week?

Could you not have used it several times every day?

We guarantee the instrument to be absolutely dependable.

WHY NOT ORDER ONE?

PRICE $15.00, Express Paid

DOBLER & MUDGE, Baltimore, Md.

SOLE SALES AGENTS

NEW YORK REPRESENTATIVE—E. W. SCARBOROUGH CO., 28 Beekman St.

Improved Paper Machinery Co.

NASHUA, N. H.

PNEUMATIC PROCESS of Thickening Pulp: widely used and of proved value. Cuts down production costs and yields continuous supply of evenly thickened stock; automatic in action.

PNEUMATIC SAVE-ALL: Saves the *highest* percentage of fibre, at the *lowest* cost of maintenance and operation per ton of reclaimed stock. Works automatically and continuously.

IMPROVED WET MACHINES :: PRESS ROLLS COUCH ROLLS :: CYLINDER MOLDS, Etc., Etc.

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Outlasts Any Other Metal

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ALUMINUM COMPANY OF AMERICA
Pittsburgh, Pa.

AMERICAN WRITING'S ANNUAL

Semi-Annual Dividend of $1 Per Share Declared—Sales Increase but Average Selling Price Falls Off—Operating Expenses Increase—Financial Statement—Officers Elected

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., February 9, 1911.—At the quarterly meeting of the directors of the American Writing Paper Company a semi-annual dividend of $1 a share was declared, payable on April 1, 1911, to preferred stockholders of record at close of business March 15, 1911.

The increase in sales for 1910 over 1909 was 7 per cent. The demand was greater in 1910 than in 1909 for the company's product, but the percentage of sales of lower grades was greater than during 1909, so that the average selling price was lower.

Operating expenses were increased on account of short product due to an unusual curtailment in water supply in Holyoke and to an increase over 1909 of about $90,000 in amount, charged off to improvements and repairs.

More business was carried over from last year than for 1909, so that the net product for January, 1911, was 10 per cent. greater than in 1910.

Mills making the machine dried papers have from two to four weeks' orders on hand, while the mills making loft dried and highest grades of papers have from one to three weeks' orders on hand.

These officers were elected: President, W. N. Caldwell; vice presidents, George B. Noble, William M. Goodnow, Edwin Gould; general manager, W. N. Caldwell; treasurer, G. B. Holbrook; assistant treasurer, William H. Heywood; second assistant treasurer, Edward H. Hall; secretary, Edward H. Hall; executive committee, W. N. Caldwell, G. B. Holbrook, James J. Storrow, George B. Noble.

The annual meeting of stockholders for the election of directors will be held in New Jersey February 14.

Resolutions on the death of William Reardon were adopted at the meeting yesterday. He had been a member of the board since February 9, 1904.

GENERAL BALANCE SHEET.

The general balance sheet of the American Writing Paper Company, as of December 31, 1910, compares as follows:

ASSETS.

	1910.	1909.	1908.	1907.
Property account	$16,629,895	$16,783,847	$16,694,208	$16,694,218
Good will	18,010,150	18,010,150	18,010,150	18,010,150
Cash	1,384,522	1,124,465	1,314,087	1,356,728
Notes received	.....	28,595	.....	277,299
Accounts received	1,224,179	1,261,180	1,131,205	1,182,494
Inventories	2,587,618	2,810,837	2,548,901	2,773,861
Company's bonds	915,946	761,122	989,629	897,372
Miscellaneous	254,472	254,472	10,235	10,235
Sinking fund	.....	1,142,650	976,000	819,150
Treasury stock	.....	.....	.....	2,000,000
Totals	$42,325,559	$42,177,317	$41,674,415	$44,021,508

LIABILITIES.

Preferred stock	$12,500,000	$12,500,000	$12,500,000	$12,500,000
Common stock	9,500,000	9,500,000	9,500,000	11,500,000
Bonds	17,000,000	17,000,000	17,000,000	17,000,000
Accounts payable	1,162	4,403	4,393	3,710
Sinking fund reserve	1,318,775	1,142,650	919,150	819,150
Profit and loss surplus	2,005,620	2,030,264	1,750,872	2,198,648
Totals	$42,325,559	$42,177,317	$41,674,415	$44,021,508

V. V.

New Chicago Warehouse for West Virginia Company

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, February 13, 1911.—Because of the rapid growth of their business in this field, and the promising outlook for the future, the West Virginia Pulp and Paper Company, with offices in the Marquette Building, has leased the first floor and basement at the northwest corner of Polk street and Fifth avenue, and will install the largest stock of super and machine finished enamel book paper carried by any house in Chicago. The new quarters will be occupied on March 1, and the office will be at the new location after that date. The location is convenient to the centre which is rapidly being established for the printing and paper trade in this city.

THOMPSON.

OBITUARY

FRANK F. CARPENTER.

The Boston paper trade lost another valued member by the death of Frank F. Carpenter, which occurred suddenly at his home at Winchester, Mass., on Wednesday night, February 8.

Although Mr. Carpenter had not enjoyed the best of health for the past five months, most of which time he was confined to his home, yet he had sufficiently recuperated to be at his office on Monday a week ago, and it was expected that he would again be an active visitor among the members of the trade. On his return home Monday night he was suddenly stricken, becoming unconscious, and did not regain consciousness up to the time of his death, which was attributed to heart trouble.

Mr. Carpenter was in his forty-sixth year, and was born in Bethel, Me., the son of Robert J. and Ellen Furbush Carpenter. His entry into the paper business was a number of years ago, when he became an employee at the mills of the Poland Paper Company at Mechanics Falls, Me. More recently he represented the Middleton Paper Mills, Middleton, Mass., and for the past three years has represented the Manufacturers Paper Company, of New York, in the New England territory.

Mr. Carpenter lived in Winchester for many years, and took great interest in the welfare and development of the town, being for six years on the school committee and serving a term as park commissioner, and as a member of various special town committees. He was a very prominent Mason, being past master of William Parkman Lodge, a member of Woburn Royal Arch Chapter and of Hugh DePayens Commandery, Knights Templar, of Melrose. He was vestryman and chorister in the Episcopal church.

The deceased is survived by a widow and son, Robert J., and daughter, Ruth. The funeral was held from his late home on Friday, the services being conducted in the Church of Epiphany, where the burial service was read by Rev. John Suter. As a prelude to the service the church organist, Charles Wilson, rendered several selections. The pallbearers were close friends of the deceased, being George F. Edgett, Preston Pond, Herbert S. Underwood, Henry C. Nickerson, William D. Sullivan, Charles H. Eastwich and H. Stone, of Winchester, and Lewis Bittner, of Brooklyn, N. Y. The burial was in the family lot at Wildwood Cemetery.

The Boston Paper Trade Association held a meeting last Thursday, and passed the following resolutions:

"In the death of Frank F. Carpenter, long a member of this association and a man much esteemed by the entire paper industry, the Boston Paper Trade Association has suffered an irreparable loss.

"With keen regret we desire to express our condolence to the bereaved family, and to place on record our sincere regard."

E. H. Stone, Hubert L. Carter and A. M. Burr were appointed to represent the association at the funeral.

The Howard Paper Company

URBANA, OHIO

MILLS: URBANA, OHIO BRANCH OFFICE: DAYTON, OHIO

Manufacturers of

Writing Paper

Our specialty:

Animal Sized Bond Paper

carrying the Patent Watermark

HAMMERMILL PAPER COMPANY

Invite inquiries on the following grades:

Ledgers, Bonds, White Writings, Linens, Envelope, Railroad, Manilla

Jobbing Trade Only Solicited

Hammermill Paper Company no longer our Sales Agent

IN THE MIAMI VALLEY

Heavy Losers by Allen Company's Failure—Burial Service of Charles D. Mead—Chamber of Commerce Would Encourage Business Enterprises

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, February 12, 1911.—Several Miami Valley concerns are among the heaviest creditors of the George D. Allen Paper Company, which filed a petition in involuntary bankruptcy the latter part of last week in the United States District Court at St. Louis.

Among the creditors are the Champion Coated Paper Company, of Hamilton, for $31,600 in merchandise; the W. B. Oglesby Paper Company, of Middletown, notes, $13,777.15, and merchandise, and the Beckett Paper Company, of Hamilton, notes, $5,580, and merchandise. The creditors allege that the company admitted its inability to pay debts, amounting to $63,723.82.

MIAMI VALLEY.

An All Round Active Demand

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, February 13, 1911.—Business conditions are gradually on the mend, most of the reports at hand this week indicating a general improvement. Nearly all lines of manufacture have been benefited by the change, and there are indications of a continuance. The paper box business is particularly active. Large orders were received last week by a couple of the big local concerns, and their forces will be busy for some time. In several establishments there has been more work than they can well care for, but in the hope of rushing things, and disposing of everything coming their way, manufacturers have continued to pile orders upon orders.

In the regular lines the market has been strong and active. Quotations are fairly good, and the demand for news, coated writings and wrappings has been keen. MIAMI VALLEY.

To Promote Business Enterprises

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, February 13, 1911.—The Dayton Chamber of Commerce held its annual meeting the past week. Paper and machinery men predominated, and the trade was honored by the selection of several of its members as executive officers. George B. Smith, president of the Kinnard Manufacturing Company, continues as first vice president and Leopold Rauh as president.

Perhaps the most important business had to do with the acquirement of a large fund for the promotion of business enterprises. It was explained that Dayton is lagging in this respect, only one paper concern having been secured from other cities during the year. This was a box concern. During the year several new paper enterprises of local origin were added to the retail and wholesale lines, however, and Secretary Moore advocated an appropriation by city council. An effort will also be made to secure funds by individual subscription. Hamilton is just completing a subscription of $50,000 for this purpose, and Dayton, with its great diversity of manufactures, and known as "A City of a Thousand Factories," it is argued, should not let that city outdo it, especially since Dayton has four times the population. MIAMI VALLEY.

Funeral of Charles D. Mead

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, February 12, 1911.—The body of Charles D. Mead, former president of the Mead Paper Company, whose death occurred in Pasadena, Cal., arrived here last Saturday, and the funeral occurred from his late residence. Mr. Mead had gone West for his health, his death following one week after his arrival in California. The funeral was attended by many of his former associates, who were leading members of the trade. Many paper tradesmen from other cities attended. Interment was made in Woodland Cemetery.

Some time ago Mr. Mead was compelled to retire from active business on account of failing health. Until the reorganization of the company, which transferred its plant to Chillicothe, Mr. Mead was its active head. The firm was first known as Mead & Nixon, and in 1881 it became the Mead Paper Company. In 1906, under the reorganization, the firm's name was changed to the Mead Paper and Pulp Company. Charles D. Mead was the son of the late Daniel Mead, a pioneer paper manufacturer of Dayton and the founder of the Front street mills, which are used by the Mercantile Corporation, which completely rebuilt them.

MIAMI VALLEY.

Spaldings to Remove to Tonawanda

[FROM OUR REGULAR CORRESPONDENT.]

NIAGARA FALLS, N. Y., February 13, 1911.—It begins to look as if the Tonawandas, midway between Niagara Falls and Buffalo, would become a paper manufacturing industrial centre. At the present time Tonawanda's biggest factory is the Tonawanda Board and Paper Company, employing 265 hands. Now comes the announcement that Spalding Brothers, of North Rochester, N. H., are to locate in the Lumber City, providing sufficient water at a reasonable rate can be procured. As Tonawanda is ready to grant the request of the big Eastern paper concern there is little question but what the New Hampshire mills of Spalding Brothers will be moved to the Niagara frontier in a short time. Tonawanda officials are satisfied that the amount of water necessary to run the million dollar concern can be furnished at a low rate, and negotiations to close the deal whereby Spalding Brothers will locate in Tonawanda are now almost completed.

On top of the announcement of the locating of the Spalding Brothers factory in Tonawanda comes the news that the Keith Paper Company, of Turners Falls, Mass., is also looking for a site up the river. Assistant Postmaster Upson and his brother, Charles Upson, of Lockport, and other capitalists, are interested in a paper company that proposes to locate in the Tonawandas, and if Niagara Falls does not get a hustle on it will have to take a back seat from Tonawanda in the paper making trade.

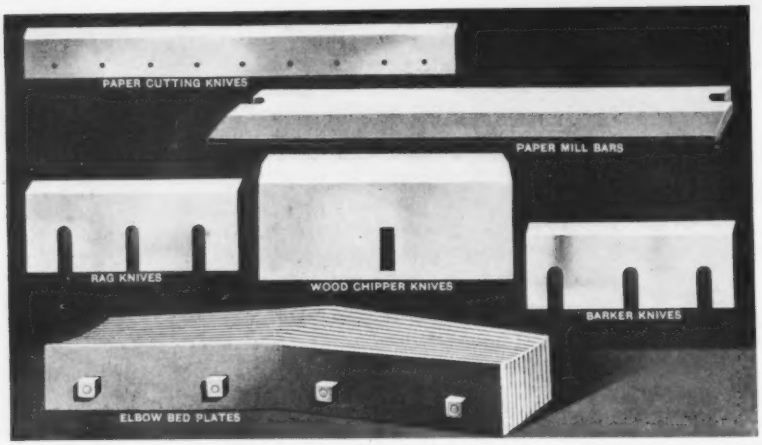
NIAGARA.

The Paper of Fifty Years Ago

WATERTOWN, N. Y., February 13, 1911.—The attention of many paper manufacturers in this city has just been called to a sample of the class of paper manufactured over half a century ago. A time yellowed copy of "The Constellation," an illustrated quadruple sheet published once in 100 years and filled with every variety of useful and interesting reading, has been brought forth from a seclusion of over thirty years. It is a relic owned for many years by the members of the family of the late Roswell P. Flower, formerly Governor of the State and a prime mover in the organization of the International Paper Company.

This edition, limited to 28,000 copies, selling at 50 cents each, was brought out by George Roberts, editor and publisher, in 1859 at New York. It comprises eight pages, each of thirteen columns on one sheet, 70 by 100 inches in size—the largest ever made and printed, it is stated. Paper experts claim that the paper is of vastly superior quality to some that has been made since wood pulp and talc came into general use.

The huge publication, as "illustrated quadruple sheet" would indicate, carries many illustrations in exceptionally good wood cuts. Among the celebrated historical characters given prominence were: President Buchanan, Edward Everett, Nathaniel P. Banks, Henry Ward Beecher, Horace Greeley and Sculptor Crawford and his statue of America.



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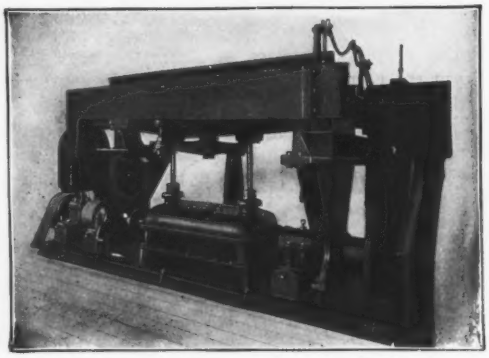

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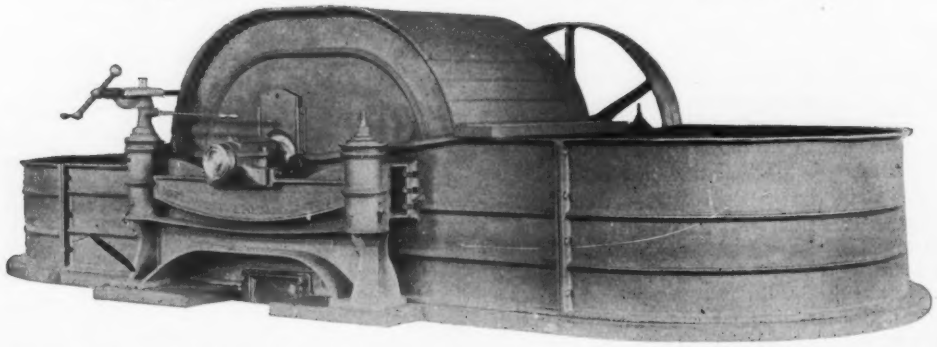
give the best results at little cost. Not a stereotyped statement—just let us prove it to you. The more you investigate, the more convinced you will become. Let's talk it over.

J. & W. JOLLY, Inc., Holyoke, Mass.

DOWNINGTOWN MANUFACTURING CO.
EAST DOWNINGTOWN, PA.
Paper Mill Machinery



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Eibel Process Company

YOU WOULD BE SURPRISED at how the cost of paper per ton, on the Fourdrinier machine, can be reduced by the Eibel Invention. It will make two blades of grass (dollars for dividends) grow where but one grew before, and will put you on Easy Street as far as competition with a non-user is concerned.

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LATEST, MOST IMPROVED, MOST EFFICIENT, SIMPLEST, therefore . . **BEST**

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Will make either Caustic Potash or Soda. Leased on Royalty to Consumers.

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Keystone Roofing Manufacturing Co.

YORK, PA.

Manufacturers of **X-L-Oid** Rubber Roofing, **Samson** Feldspar Roofing. Water, Acid and Alkali proof. No Coal Tar.

Waterproof Case Linings. All Grades. Duplex and Single Coated.

Conewago and Keystone Brands, Red Rope Roofing, Insulatings, Black and Parchment Building Papers.

A Good Paper Mill

Should Have a GOOD BELT

"1846 PARA" Belting is made of the strongest belting duck and best rubber for the purpose. Possesses greater tensile strength and will stretch less under a given load than any other belt.

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is equally essential. Our "INDESTRUCTIBLE" High Pressure White Sheet Packing and "COBBS' High Pressure Rod and Valve Stem Packing have proved a boon to thousands. MAGIC" (Wedge Packing) is made with a rubber back, which will compensate for worn rods.

We manufacture Packings to meet all conditions. Catalogues and samples cheerfully furnished on application.

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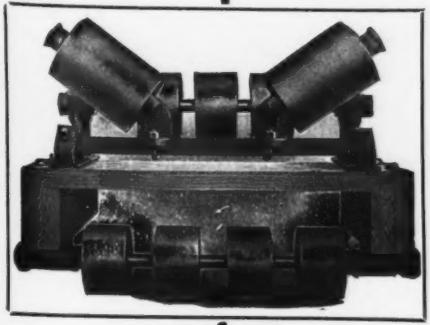
SAN FRANCISCO, CAL., 129-131 First St.
ST. LOUIS, MO., 218-220 Chestnut St.
PORTLAND, ORE., 40 First St.
BOSTON, MASS., 232 Summer St.
INDIANAPOLIS, IND., 120 South Meridian St.
PITTSBURGH, PA., 420 First St.
SPOKANE, WASH., 163 Lincoln St. (South).
LONDON, ENGLAND, 11-13 Southampton Row.



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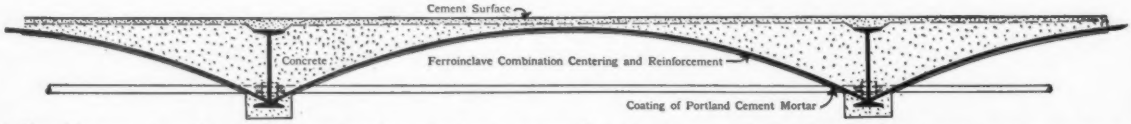

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Ferroinclave

NO MORE WASTING OF WOOD

By a New Method Practically All Parts of the Tree, Branches Included, Can Be Converted into Pulp, Resulting in Great Savings to the Mills—Process Now in Operation

By A. A. Tanyane.

(Written for the Convention Number of The Paper Trade Journal.)

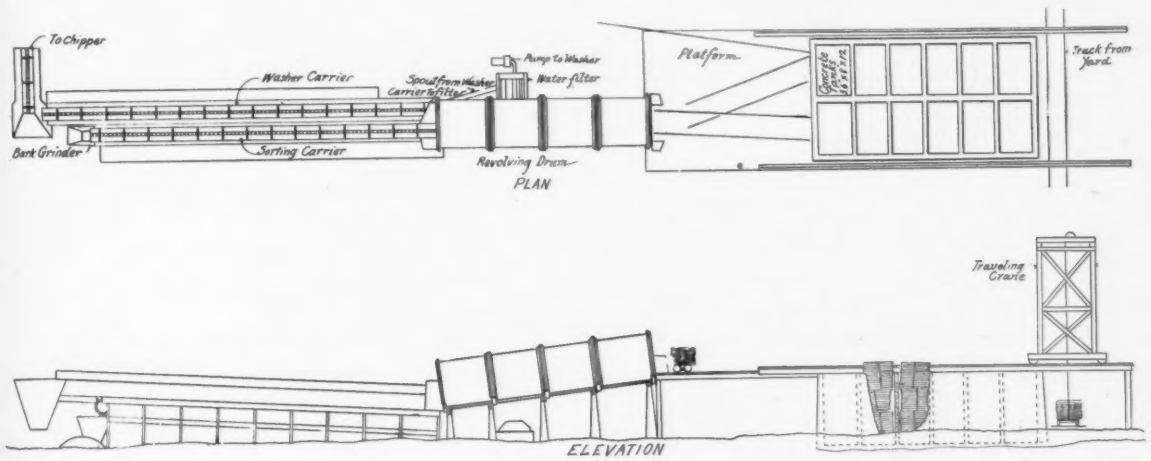
The paper and pulp industry ought to feel deeply indebted to F. W. Ayer, president of the Eastern Manufacturing Company, of South Brewer, Me., and to W. S. Haley, the company's superintendent, for the discovery of a process by the former and mechanical equipment by the latter which will mean the saving of over $25,000 to $100,000 or more a year, depending on the size of the plant, in the making of sulphite fibre or ground wood pulp. The advocates of forest conservation will also be indebted to Mr. Ayer for remedying to a great extent the devastation of the forests by making it possible to utilize every twig of the tree, thus eliminating the great waste of lumber now existing. The genius of the new process is Mr. Ayer, who for some time has realized the enormous waste in lumber which, if it were possible to convert into pulp, would save for him many thousands of dollars every year, as well as benefit the industry at large. This process he has now installed and has in full operation in his plant. It is fully protected by the United States patent laws, and means are under way to have the process patented in other countries.

Besides the enormous saving of lumber this process of Mr. Ayer's means a proportionate saving in the cost of labor and expense of removing bark by the mechanical methods in vogue; the waste by these methods of perfectly good wood fibre amounts to nearly, if not quite, 25 per cent. of the whole quantity represented by standing timber. A collateral but none the less serious condition is presented by the masses of tops, branches and bark strips, etc., which are left on the ground in the timber country to rot and dry. The existence of these masses of dry timber are of constant menace to the surrounding forest, and it is from just such sources that many of the destructive forest fires take their origin.

Tree Tops and Branches Can Be Used.

The Ayer process will tend to remove these difficulties in that it makes it possible to utilize the perfectly good pulp wood of which the tree tops and branches are for the most part composed. Again, slabs and edgings from the lumber mills, being too small for the operation of the mechanical bark removers, are wasted except so far as they may be used as fuel. No matter how crooked or twisted a piece of timber may be, this process removes every particle of bark as clean and thoroughly as though every inch had been scraped by hand and sandpapered. The simplicity of this process makes one marvel that it had not been thought of or discovered long before now.

The wood is loaded on trucks which carry one cord, and which are shunted on rails to hoisting cranes, where the wood is lifted and carried over a series of twelve reinforced concrete vats, which are filled with a solution at a temperature of 180°, and the wood is dropped into these vats until each vat contains three cords. The wood is kept immersed in these vats until the wood and bark have become thoroughly saturated, and the cementitious matter or bark glue has become gelatinous or partially liquid. This takes from two or four hours, according to the condition of the wood before immersion. The wood is then removed from the water, and carries with it enough water in saturation to maintain the bark glue in the loose lubricant, gelatinous condition for a considerable time, a time which is amply sufficient to allow for the removal of the bark by gentle mechanical treatment.



Drawing of Apparatus, with Conveyors, Used in Preparing Pulp Wood Waste for Paper Making.

The Wood Is Tumbled in a Rotary Drum.

Simply tumbling the wood in a rotary drum suffices to shake off the bark which, in its saturated condition, adheres to the wood by suction. This treatment completely denudes each piece of wood from its bark covering; the bark strips from knots and other depressions perfectly and cleanly, leaving the wood in condition for immediate reduction to pulp.

After passing through the rotary drum, the bark having been completely removed from the wood, both the wood and bark are emptied on to chain conveyors, where the wood is picked off by hand and tossed on another conveyor, which passes through a series of washing sprays which touch the wood from above and below the chain conveyor. At the end of this conveyor the wood, having been thoroughly cleansed of any foreign matter, is dropped into an incline, which carries it to another endless conveyor, and this delivers it to the chipper. The removed bark drops from its carrier into a series of grinders, and by mixing the ground bark with coal the fuel value of the bark is conserved, and it is estimated that its value at least covers the entire cost of operating the bark removing process.

The apparatus is simple and inexpensive to install and economical to operate, saving as it does in power and labor 75 per cent.

(Continued on page 295.)

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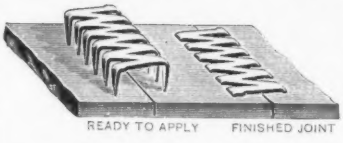

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HOLYOKE TRADE NEWS

Water Power Company's Privilege to Furnish Electric Power May Be Revoked—Representative Lawrence Makes Statement as to Connecticut River Improvement Appropriation

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., February 14, 1911.—The report that steps might be taken toward the repeal of the Holyoke Water Power Company's privilege relative to certain rights in furnishing electric power has aroused considerable interest among the local manufacturers. It is stated that when the Holyoke Water Power Company was granted the right to sell electric power to manufacturing plants in competition with the city's electric plant two years ago by legislative act, the representatives of the water power company promised at the time to enter into a vigorous campaign for the building up of Holyoke industries. One of the specific verbal promises made was that the company would immediately erect a large building for the suitable housing of smaller industries and furnish them with the necessary electric power.

Following the passage of the act plans were made for such a building, and for some months it looked as if the company really intended to fulfill the promise. But now, after two years, the matter seems to have been dropped altogether, and Holyoke is in the same position apparently as it was before the passage of the act, except that it is dispossessed of the valuable right of determining the conditions under which electric power can be furnished in the city. Within the last few weeks several manufacturers have been looking into the matter, and find that representatives of local and outside concerns desirous of starting up in business here have appealed to the water power company for suitable quarters, but without satisfactory results. The investigators have decided to introduce an order to the Board of Aldermen calling for the repeal of the act passed two years ago, and present the matter before the 1912 session of the Legislature. V. V.

Congressman Lawrence Replies to Navigationists

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., February 14, 1911.—Because the Connecticut River is not to receive the much wanted dredging appropriation of $25,000, there has been considerable talk that Congressmen Lawrence and Gillett were somewhat to blame in the matter. This talk has caused Congressman Lawrence to make the following statement: "Early in December Messrs. Sheehan, Tenney and Burgi saw me in my committee room in the Capitol and asked if an appropriation of $25,000 could not be made for the purpose of repairing some ancient wing dams and dredging the channel above Hartford to some extent. I replied that no such expenditure had been recommended by the War Department, and that Congress would not make the appropriation without such a recommendation. I suggested that they might go to the War Department for the purpose of seeing whether such a recommendation could be secured, that the river and harbor bill would not be passed, in my opinion, before February 1, so that they had plenty of time for such an interview. About February 1 Mr. Burgi appeared in Washington and said that a conference with Major Taylor had disclosed the fact that he had no authority to make such a recommendation. The bill was then before the Senate, and I sent him to Senator Crane.

"So far as I am personally concerned, I do not hesitate to say that I am opposed to any further surveys at the present time. I have had the Connecticut River from Hartford to Holyoke surveyed time and again. Without any fear of contradiction, I assert that there has been more money expended in surveying this 34 miles of river than there has been on any other 34 miles of river anywhere in the world. We have at last succeeded in securing a recommendation for the expenditure of over $1,000,000 by the Government upon a project for the development of power and navigation jointly. Until that recommendation is definitely acted upon I am opposed to any further surveys, which mean delay and might complicate a situation which is more promising than ever before." V. V.

The Marietta (Ga.) Mill—A Correction

Attention has been called to an item which appeared in THE PAPER TRADE JOURNAL of February 9, under the caption "Gives Over His Receivership," wherein it was reported by THE JOURNAL'S correspondent at Niagara Falls, N. Y., that Edward M. Bowman, late superintendent of the Georgia Manufacturing Company's mill at Marietta, Ga., had reported that the Marietta mill was in bad condition, and that he had resigned in consequence. N. W. L. Brown, the vice president and manager of the Marietta mill, takes exception to Mr. Bowman's statements, which he charges are altogether at variance with the facts, and designed merely to support his record at the expense of the mill. There is absolutely nothing wrong with the mechanical condition of the mill, Mr. Brown says, and he charges that certain differences between the management and the owners, and nothing else, led to the retirement of Mr. Bowman.

NO MORE WASTING OF WOOD

(Continued from page 293.)

from the old method. Another feature in connection with the apparatus is the continual using of the same water for washing purposes, which affords an even temperature of water at all times. This is accomplished by the means of hydraulic pumps.

INCREASES PULP YIELD 33⅓ PER CENT.

The new process has been in operation at this mill for sufficient time to afford accurate estimate of its value as follows: The mill is given 33⅓ per cent. increase of pulp stock, provided it cuts only the same amount of lumber and wood as heretofore, and this increase is not offset by any increase in expenditure, but, as far as can be estimated, the reverse is the case. The economy in pulp stock reacts to bring economy in operation, which places the cost of producing the additional material at zero, according to careful and conservative estimate. Mr. Ayer states that if his company had been possessed of this new process in the last ten years it would have saved at least $750,000, exclusive of interest. In other words, thousands of acres of denuded timberland would now be covered with untouched timber if the process had been known and used in the past.

Moreover, it is probable that the application of this process to pine and the firs of the Pacific Coast (which have not as yet yielded satisfactorily to paper pulp processes) will be effective to render them suitable for paper material.

By reference to public statistics it will be made clear that universal adoption of such a process will be equivalent to conservation of enormous tracts of privately owned timberlands, supplementing the Governmental reservations without burdening the national or State treasuries—a circumstance which should gratify everyone. Another matter of importance in connection with the new process is the fact that not only does all the material in the tree go into the making of paper, but that the spoiling of quantities of fine papers by the intrusion of bits of bark is avoided.

It should be stated that the use of this new process can be undertaken by any mill engaged in the making of wood pulp, as no complicated machinery is necesary to be installed.

A Generous Donation

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., February 13, 1911.—A. W. Priest, president of the Outagamie Paper Company, who recently donated $6,000 to the fund of the local G. A. R. for a soldiers' monument, has just given $3,000 to provide for the construction of a concrete arch bridge at Riverside Cemetery. FOX RIVER.

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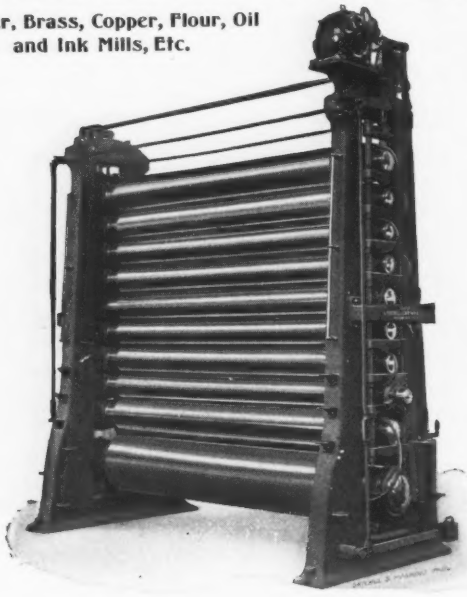

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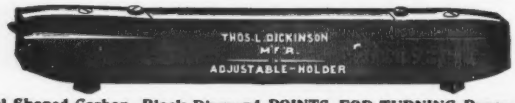

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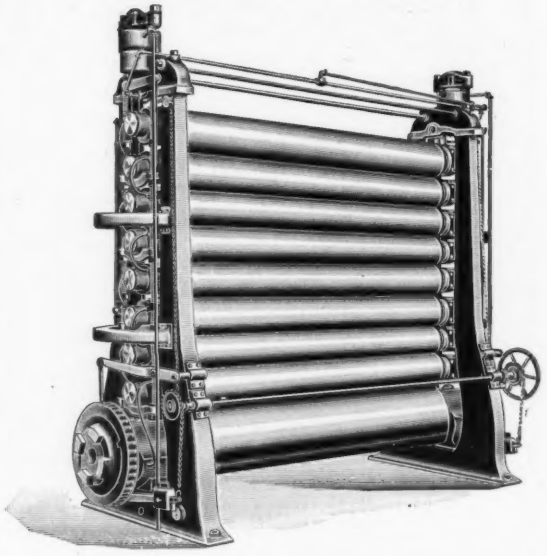

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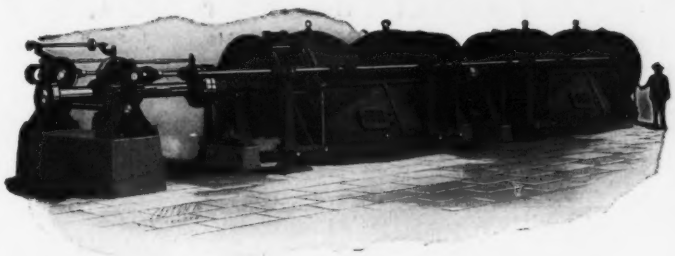

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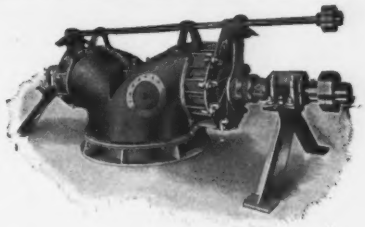

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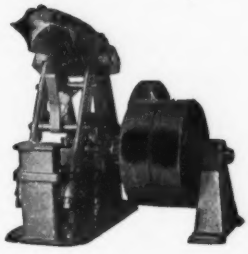

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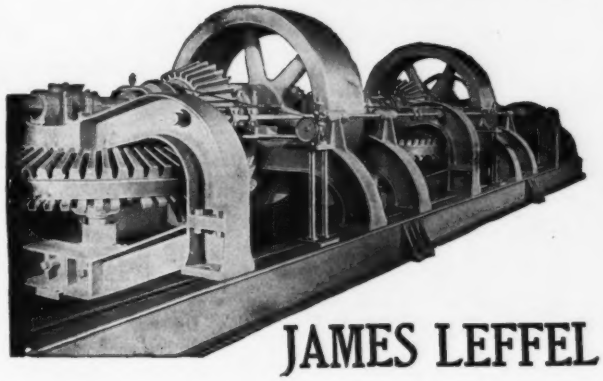

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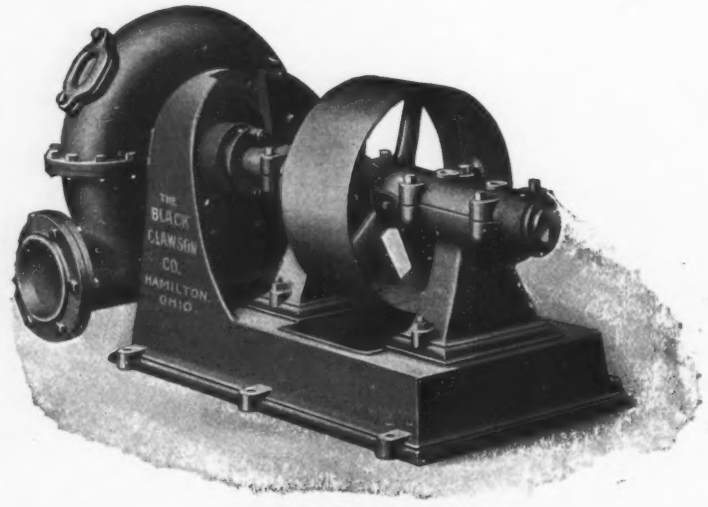

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RECIPROCITY

House Passes McCall Bill by Vote of 221 to 92

Pulp and Paper Clauses Made a Separate Section—No Further Ambiguity—Canadian Raw and Finished Product to Be Admitted Free—How the Dominion Views the Situation.

WASHINGTON, D. C., February 14, 1911.—After a day's heated debate, lasting from 11 in the forenoon until 7:50 tonight, the House of Representatives this evening passed the Canadian reciprocity agreement in the shape in which the Ways and Means Committee had already reported it. This retains all of the original agreement except the section on wood pulp and print paper, which is changed in terms to suit what the Ways and Means Committee believed to be the meaning of the agreement. Opinion is now about evenly divided as to whether the bill will pass the Senate.

Today's debate was largely of the usual type, except that it was more to the point than is usual on the floor of the House, and was marked by an unprecedented degree of bitterness.

The McCall bill, carrying the agreement into effect, was passed, 221 to 92. A majority of the Republicans present voted against the measure, the division being 78 ayes and 87 noes. The Democratic vote was 143 ayes and only 5 noes. A majority of the Republican insurgents present voted for the bill.

The McCall bill now goes to the Senate. President Taft believes that if a filibuster can be avoided and a vote taken the bill will pass. He is insistent that the Senate shall act one way or the other, and has indicated that he would call an extra session of Congress if it does not do so.

A final vote was reached tonight only through the application of a cloture rule which shut off all amendments and even dispensed with the reading of the bill. This procedure was decided upon only after Mr. McCall, in charge of the bill, had failed to get unanimous consent to do away with calendar Wednesday tomorrow.

The clause relating to pulp and paper was taken out of the body of the bill by the Committee of Ways and Means and made a section by itself at the end of the draft. It reads:

"Sec. 2. Pulp of wood, mechanically ground; pulp of wood, chemical, bleached or unbleached; news print paper and other paper, and paper board manufactured from mechanical wood pulp or from chemical wood pulp or of which such pulp is the component material of chief value colored in the pulp, or not colored, and valued at not more than 4 cents per pound, not including printed or decorated wall paper, being the products of Canada, when imported therefrom directly into the United States, shall be admitted free of duty on the condition precedent that no export duty, export license fee or other export charge of any kind whatsoever (whether in the form of additional charge or license fee or otherwise) or any prohibiton or restriction in any way of the exportation (whether by law, order, regulation, contractual relation, or otherwise directly or indirectly) shall have been imposed upon such paper, board or wood pulp, or the wood used in the manufacture of such paper, board or wood pulp, or the wood pulp used in the manufacture of such paper or board."

The Situation in Canada

[FROM OUR REGULAR CORRESPONDENT.]

OTTAWA, Canada, February 13, 1911.—In order to enable members of Parliament to estimate the effect of the proposed reciprocity agreement, Finance Minister Fielding has issued a Blue Book showing the probable reduction of duties it would produce, based on the trade of 1910. On imports into Canada from all countries the lower tariff would cut into the revenue to the extent of $2,507,824. Taking the United States alone the reduction amounts to $2,363,763. The corresponding reduction to be made by the United States on Canadian goods is estimated at $4,849,933. The absolutely free list offered by the United States is responsible for an estimated reduction in duties of $4,236,988, and Canada's free list is represented by $1,295,611.

The estimated reduction on wood pulp and paper coming into Canada (assuming that the reciprocal clause on this point is ratified) is estimated at $155,771. All but $8,000 of this amount is covered by the agreement, and that should appeal even to those who consider the financial aspect of such matters first. Nothing in the agreement seems to justify the statements made that it will result "in Canada's annexation to the United States." G.

May Go to the Country on Reciprocity

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Canada, February 13, 1911.—In and about the paper mills and offices of this city the one topic overshadowing all others is the effect of the reciprocity agreement should it be ratified. With some of the book and writing men there was a fear previous to the publication of the treaty's terms that their branch of the paper industry might in some way come to harm, despite the general belief that ground pulp and news print were the only commodities under consideration.

While opposition to the pulp and paper clauses seems general among the United States mill owners, it is not to be taken for granted that Canadian paper men are wasting any hallelujahs over it. This section of Canada, with its network of factories, is not unnaturally protectionist in sentiment. While the flavor of plausibility given to the agreement by Finance Minister Fielding and Sir Wilfrid Laurier has guaranteed the support of the Liberal party, yet the lack of unanimity throughout the Dominion leads to the belief that the Government may go to the country with reciprocity as its platform. A well founded story to that effect has reached here from Ottawa. Ontario paper men, the great majority of whom manufacture for domestic trade only, are strict stand-patters on the question of tariff, and while outside the pale of the present agreement would in all likelihood oppose what they believe the beginning of a bad end. L.

Crux Lies in Pulp and Lumber

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, February 13, 1911.—The reciprocity question, especially as it refers to pulp, paper and lumber, continues to be the main theme for discussion to those interested in these industries. In addition to discussing the matter pro and con on this side of the line, Canadian pulp and lumbermen are following with unusual interest the discussions which are taking place on the American side of the border. By many it is felt that the whole crux of the reciprocity negotiation will hinge upon the solution of the pulp and lumber end of it. As has already been pointed out, the matter is complicated by the fact that the provinces control their own Crown lands and the timber thereon. It is almost a certainty that they will oppose any infringement of their rights by the Dominion Government. Unless, therefore, the provinces will abolish their restrictions regarding the cutting of lumber on Crown lands the negotiation, in so far, at least, as pulp and lumber are concerned, will come to nothing.

CONSERVATION AND RECIPROCITY.

In addition to the provincial rights question there is also the question of conservation. This has taken a firm hold upon the Canadian people, and there is a growing disposition to curtail the wholesale cutting of our timber lands. At the same time there is

(Continued on page 305.)

Money Talks—and to the Point

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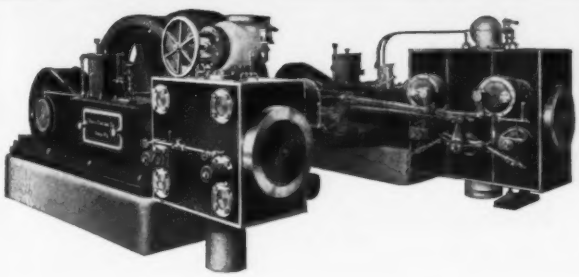

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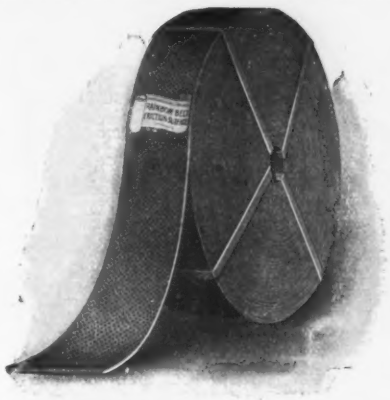

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Editorial

Vol. LII., No. 7. NEW YORK, THURSDAY, FEBRUARY 16, 1911
39 YEARS OLD

Another Step Toward Reciprocity

The American-Canadian reciprocity agreement has been advanced an important step by the passage last Tuesday of the McCall bill ratifying the tentative arrangement of the commissioners. So far as any modification of the terms was concerned, the Ways and Means Committee might have been spared the labor of listening to the evidence pro and con. It looked like a cut and dried affair. No purely party measure could have been more so. Yet the differences of opinion were pronounced to the extent of bitterness which split the Republican party in twain, and which may possibly lead to a rupture more or less permanent between the two sections. The Democrats, mostly from the solid South, had no personal issues at stake, and those who had made them subservient to party exigencies. They voted solid as a flock of sheep. And so it has happened that the House of Representatives has passed the bill by the comfortable majority of 129.

Of all the opposition encountered the most serious was directed against the pulp and paper clauses. The industry took a firm stand and made a good fight. No one who took the trouble to read so much as a summary of the committee hearings can fail to wonder upon what grounds the committee was justified in reporting favorably the bill which has passed the House.

It had been confidently expected that in wiping out the ambiguity surrounding the pulp and paper section the committee would so amend the original draft as to give the industry at least a fair measure of reciprocity. But instead they affirmed in a more emphatic way the intention to present to Canada the print and cheaper grade paper market of the United States without compensation of any kind. It was thought that after the arguments so ably presented before the committee had been duly digested that one of two alternatives would have been adopted; either that the pulp and paper clause would be altogether eliminated, or that the American tariff reductions would not be made operative until the provinces of the Dominion had raised all embargoes upon the export of wood and pulp to this country. What the committee did, however, was to take out the clause at issue from the body of the bill and append enough of it at the end as a seperate section to make it fully understood that Canada was to have practically everything and the United States nothing. It has left the option of absolute free trade in paper to the Dominion provinces.

Lest there should be any confusion as to the position of Newfoundland, it might be well to explain that the reciprocity agreement in no way concerns that country, which is a self-governed British colony not allied to Canada. The island of Anticosti, however, which promises to be a fruitful source of supply for pulp wood, is nnder the jurisdiction of the Dominion, and as it is owned in fee simple by one man, the spruce in which it is said to abound may come in free, as well as pulp or paper made therefrom.

Need Federal Aid to Preserve Forest and Stream

The Senate has under consideration a measure designed to conserve what has been generally termed the "strategic areas" embracing the forests of the Appalachian and the White mountains. The fate of the bill, generally known as the "Joint Eastern Forest Reserve Bill," apart from its national importance, means a great deal to the paper manufacturing and other industries. Why, therefore, should it have been batted about like a shuttlecock during the last ten years at the whim of political expediency? The answer, however, explicit, must reflect more or less upon the efficiency or integrity of those in Congress entrusted with the natural wealth of the nation.

To certain Senators and Representatives has frequently been implied the soubriquet "Treasury Watch Dog," from the fact that they have taken upon themselves the duty of guarding the nation against unnecessary or unwarranted extravagance on the part of Congress.

It is indeed well that we should have many of these vigilant watch dogs. But the wealth of the nation is not made up of cash alone. Besides the gold and silver specie in the banks and treasury vaults there is the even greater asset of natural resources, which, when dissipated, cannot be reclaimed. Its forest, mineral and water supplies are to a nation what health and strength are to a man. They are the main factors in the development of wealth and prosperity. To waste or destroy them is to sap the vitality of the nation, and, as in the case of the health of an individual, leave it incapable of further progress.

The secret of the power of the United States lies in the wealth of her natural resources, and as the nation grows older, and the constant drain begins to tell, it is just as needful to keep a sharp curb upon their conservation as it is to guard the actual cash in the treasury.

The bill, although a Federal measure, is really more of State than national concern. Several States are deeply interested. They include five of the New England group and thirteen of the South, through which flow the rivers that take their rise in the mountain forests referred to.

The direct purpose of the bill is to permit the interested States to take care of their own internal affairs in matters pertaining to their forests and water courses; in other words, to take such steps as they may deem necessary toward the preservation or conservation of their own natural resources, while Congress shall contribute a comparatively small appropriation toward the general aim. Leading exponents of conservation, including even such authorities as ex-President Roosevelt and Mr. Pinchot, have all along maintained that the remedy against waste of water and forest lay in Congress; but if this be so, then surely it is a very slow remedy, for nothing substantial has been done in years, as evidenced by the dilatory tactics pursued in respect to the joint Eastern forest reserve bill, now about ten years old.

The Advertisers' Answer

The twaddle, like the barking of a fice, from certain quarters, in a foolish attempt to discourage advertisers from advertising in our Convention Numbers, is forcefully rebuked by the advertisers themselves in this number, in which the announcements exceed all previous records.

A Commission Should Hear Damage Suits.

Editor Paper Trade Journal.

DEAR SIR.—It would seem to the writer that this is a matter of extreme importance to the employer as well as to the employee, and something should be done to correct the evils of the system under which damage actions are adjusted to-day. As stated in your recent editorial, it is a serious question with the manufacturer, for he does not know how soon he may be mulcted for perhaps an amount that will seriously cripple his business or in some cases eliminate him (or a company) from the business world. Like every other question, there are two sides to it. Of course, the harship of an accident, where a workman is seriously injured is just as vital to him as to his employer, and if he is permanently incapacitated from being able to earn his livelihood, he has suffered a loss perhaps from his standpoint equal to the loss of the manufacturer under the heaviest of verdicts. Now, it seems to the writer that our court system is entirely wrong in regard to actions arising from alleged negligence on the part of the employer. The employer lays his troubles in this line to the ambulance chasing lawyer, while the injured employee is equally prejudiced against the corporation or its lawyer.

In order to show the inconsistencies of the present system, I will take a recent action against a paper company as a case in point. A man was injured by being caught on an exposed set screw on a small counter-shaft. Injuries consisted of the arm being torn off, shoulder and several ribs broken, as well as lesser injuries. Needless to say this man is permanently incapacitated from doing any ordinary labor. It is not my purpose to go into the merits of this case in any way, but simply to follow it as regards proceedings in this type of cases.

The injured man was approached for settlement but this was found to be impossible, owing to the fact that some of his friends had advised him that he should have a very large amount, so large in fact that any further overtures were useless. The injured party then turned the case over to a lawyer on a commission of 50 per cent. plus some of the expenses. The plaintiff was nonsuited on the first trial in the Supreme Court. An appeal was made and a new trial granted, where the verdict given was $3,000. The judgment and costs amounted to about $4,000.00 which comes out of the manufacturer (or the Liability Company protecting him) Now what benefit does the injured person in this case receive? Very little if anything over $1,000, the lawyer and costs getting the balance. Assuming that the man was entitled to the above judgment, why should he be given the paltry sum of $1,000 while it cost the employer four times this amount? On the other hand, if the injured party was only entitled to $1,000 the employer has had to pay $3,000 that he did not owe, or has been "stung" to this amount. Who got this money? It went to the lawyers and costs of various kinds.

Another feature of this case is that it has dragged along for nearly three years. Now, if the injured man was entitled to this money three years after the accident, why was he not entitled to it at a reasonable time after the accident? Again, the employer should know where he stands regarding it at once rather than to have such a matter hanging over his head for three years. These cases should be closed up and settled inside of six months, and a law passed to this effect would be a good start in the right direction. It seems preposterous to me to bring a negligence action, which involves machinery and processes, to court to be tried and disposed of according to its merits by a bunch of lawyers and farmers who probably never operated any machinery more complicated than a grindstone.

How to Adjust Damage Claims.

In connection with the foregoing statement, would say a few years ago I saw the plaintiff of what appeared to be a very meritorious case non-suited because of his lawyer's lack of knowledge regarding the machinery of a paper mill. Why not take these cases out of the courts entirely and have them heard by a commission? There are certainly good reasons why this should be done. From twenty-five to fifty per cent. of the cases on the supreme court's calendars are negligence or damage actions (New York State), which overcrowd the courts, causing delay and expense.

If a commission were appointed composed of three men, say one to be a supreme court judge and the other two to be disinterested citizens, probably men of knowledge along the lines represented by the case. This commission could render a decision just as impartial, honestly and more intelligently than a number of lawyers and a jury. It would greatly reduce costs and would be more just to both sides.

These actions should be disposed of inside of sixty days, and the lawyer's fees limited by law to not exceed ten per cent of the judgment. The verdict might be subject to appeal but made returnable by law inside of thirty days. It is a notorious fact that a large per cent. of the actions brought for negligence have absolutely no merit, yet there are plenty of lawyers who will take a chance on getting these cases to the juries.

"MILLMAN."

Guard Machinery and Appliances.

The many accidents of the past few years should be sufficient reason for manufacturers to thoroughly investigate every appliance which has safety in its claims. For not only do these accidents destroy property and life, but they cause delays and loss of business which are matters of no small consideration.

As the present age is one of progress as well as economy, it therefore becomes the duty of every owner or manager to become familiar with the problem of safety, not only of the plant but also of the lives of his employees. This is not only true from the standpoint of man's duty to his fellow men, but it is also a business necessity as the many negligence actions have proven.

The inspections made by the state officials as well as inspections made by the liability company's inspectors, have had the effect of cutting down materially the number of accidents, yet they are by far too numerous to-day. It is only through constant watchfulness and care, and by frequent inspections that these accidents can be reduced in numbers. No plant can be made fool-proof, and accidents will happen, yet if dangerous places about a mill are guarded and a system of watchfulness put in practice much can be done to make the average mill more safe.

"M."

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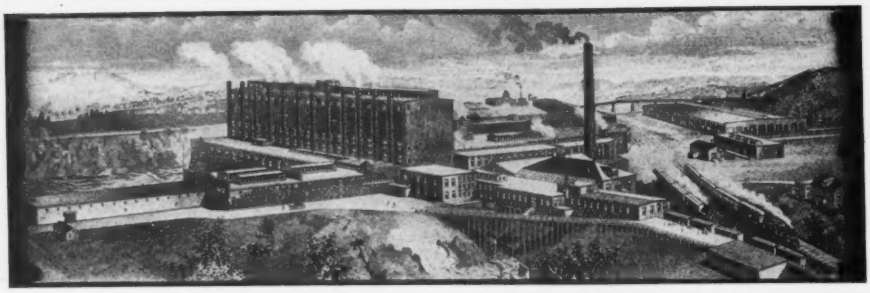

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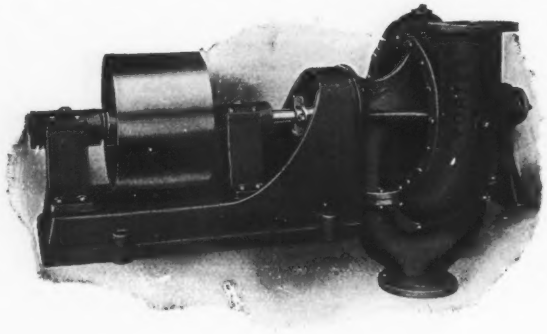

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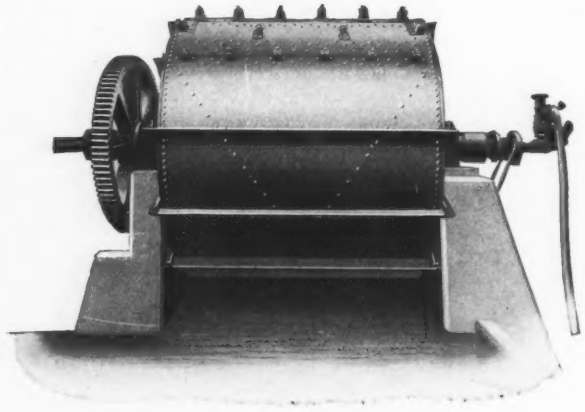

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BAKER & SHEVLIN CO., Saratoga Springs, N. Y., U. S. A."

THE RECIPROCITY TREATY

(Continued from page 299.)

growing up a more intelligent idea of what conservation really means. The more thoughtful people are seeing that conservation does not mean stagnation; in other words, conservation does not mean that there shall be no timber cut and that the forests shall stand unmolested to be handed down to future generations as they are today. The new interpretation of conservation is that the forests, the water powers and the land shall all be intelligently used; that the value of the forests shall be kept up or even increased by an intelligent system of reforestation and planting of waste areas. In the same way it is pointed out that conservation of the soil does not mean that the farms shall lay idle, but that they shall be conserved by rotation of crops and intelligent methods of cultivation. To produce and at the same increase in value. If this new idea of conservation becomes prevalent throughout the country much of the fear regarding the throwing open of our timber areas would disappear. There has been noticeable tendency of late to adopt better forestry methods and to put into operation the true principles of conservation.

WILL NEWFOUNDLAND BENEFIT BY RECIPROCITY?

The question has arisen here regarding the possibility of Newfoundland sharing in any pulp and lumber reciprocity arrangement between Canada and the United States. The question arose over an inquiry from Newfoundland. Interest as to whether they can ship their products into Canada and then reship them into the United States as Canadian goods. It is stated here that such a course would not be possible. The two countries are entirely independent in so far as their trade relations and political affiliations are concerned. At the present time the United States places Canada and Newfoundland on the same tariff basis, there being the same duty on wood pulp, chemical pulp and all other wood products, no matter from which country it is received. R.

Lumbermen and the Treaty

[FROM OUR REGULAR CORRESPONDENT.]

OTTAWA, Canada, February 13, 1911.—The paper and pulp interests of Canada were well represented at the annual meeting of the Canadian Lumbermen's Association in Ottawa on February 7. A pronouncement on the proposed reciprocity agreement had been looked for, but no official action was taken. The issue, however, was discussed in a quite animated manner at the association's banquet in the evening.

The officers elected for the ensuing year are: Honorary president, J. R. Booth, Ottawa; president, J. B. Miller, Toronto; vice presidents, J. C. Browne, Ottawa; John Hendry, Vancouver; D. C. Cameron, Winnipeg; Alex. MacLaurin, Montreal; directors, J. B. Miller, Toronto; Gordon C. Edwards, Ottawa; J. S. Gillies, Braeside; J. C. Browne, Ottawa; J. J. McFadden, Renfrew; H. K. Egan, Ottawa; W. C. Laidlaw, Toronto; Dwight J. Turner, Toronto; Geo. Gordon, Cache Bay; W. H. Rowley, Ottawa; W. A. Firstbrook, Toronto; John Hendry, Vancouver; Otto Lachmund, Arrowhead, B. C.; A. D. McRae, Fraser Mills, B. C.; William McNeil, Vancouver, B. C.; D. H. McLennan, Montreal; Alex. MacLaurin, Montreal; William Power, Quebec; D. C. Cameron, Winnipeg; William Cowan, Prince Albert, Sask.; treasurer, R. G. Cameron, Ottawa; secretary, Frank Hawkins, Ottawa. Strong committees were appointed on legislation and insurance.

Secretary Hawkins' report showed that important work had been done in 1910 in preventing the shutting out of United States mutual fire insurance companies from doing business in Canada. Much of the lumber in the Ottawa Valley is underwritten by these concerns. The association failed to get a satisfactory order from the Railway Commission on freight rates on lumber exported from Canada. It was decided to take this matter up again.

AN ANTI-RECIPROCITY SPEECH AT THE BANQUET.

The banquet at the Laurentian Club in the evening was most successful, nearly one hundred members of the association and their guests being present. The chair was occupied by President Miller. It was not expected there would be any reciprocity speeches, but J. F. Orde, K. C., legal adviser of the association in its case against the railways, broke the ice in a protest against reciprocity, and Senator Edwards replied in favor of it. Mr. Orde feared that if Canada made reciprocity arrangements with the United States it would be the parting of the ways in regard to British connection, and that Canada's destiny would be absorbed in the perhaps larger destiny of the United States. Canada's railways had been great forces in binding Canada together east and west, and he feared if trade began to flow north and south instead this bond would be broken and Canada would lose this great unifying element. In the words of a song which had just been sung he feared Canada would become truly rural, and that her smoking chimneys would become cold—all for the benefit of the manufacturers of the United States. He wanted to see Canada retain her factories and develop all her possibilities.

Senator W. C. Edwards, in reply, disclaimed the jocular title ascribed to him as being the only free trader in Canada. There were lots of sensible people in Canada, and it was only rarely that his friend, Mr. Orde, went off on this tack. He had never felt that to do that which would promote happiness and prosperity would create disloyalty, and he saw not the slightest danger from the freest possible intercourse with the United States. He believed in being able to buy from the man who produced the best article at the lowest price, and in being free to sell in the best market, no matter where. So far from viewing the proposed reciprocity agreement as a menace to British connection, he believed it was the best move for British Imperialism that had ever been suggested. Canadian railways would have more to do, and trade with Great Britain would be larger than ever. No Canadian interest had anything to fear and every Canadian interest would be benefited.

Hon. J. G. Foster, United States consul, made a witty and diplomatic speech, but without committing himself either way.

Secretary Frank Hawkins was warmly congratulated upon the entire success of the whole meeting. G.

Denied by West Virginia Pulp and Paper Company

Apropos of the articles appearing in the daily papers about the control of the magazines by the banking interests, and the reference to the West Virginia Pulp and Paper Company, John G. Luke, president of the company, says:

"I know nothing about the affairs of the magazines, but no banking interests or Standard Oil people are financially interested in the West Virginia Pulp and Paper Company. It is absolutely independent, and its business is solely to manufacture pulp and paper, and to sell it, and does not and has not presumed to influence the editorial policies of its magazine customers."

Mill Files Bankruptcy Schedules

Schedules in bankruptcy of the Highland Paper Mills Company, of New Windsor, N. Y., show liabilities of $67,288, of which $37,000 is secured by realty mortgage and bonds, and nominal assets of $8,849, consisting of stock and materials, $8,000; fixtures, $200; accounts, $616; cash in bank, $33, and real estate, factory property, mill houses, value unknown, on which there is a mortgage of $10,000, and a $50,000 trust mortgage to secure bonds, which is under a foreclosure. Among the New York creditors are William A. Read, $10,000, secured; Castle, Gottheil & Overton, $4,971; Maurice O'Meara Company, $2,460, and Gatti-McQuade Company, $1,660. Other creditors are Ruth L. Bailey, Mount Vernon, $18,500, secured, and Columbus Trust Company, Newburgh, $8,500, secured.

The News is the latest paper to be launched at Wadena, Minn. It makes the second one for the town, and is issued semi-weekly.

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PAPER

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An establishment located in this territory receives the benefit of cheap fuel, electric power and low freight rates, made by water competition.

The Industrial Department will aid in the establishment of industries, develop side track questions and give complete information.

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OUR VERA PAPER SIZE

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WEEKLY IMPORTS OF PAPER AND PAPER STOCK AT NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

IMPORTS OF PAPER STOCK AT NEW YORK

From January 1 to February 15, 1911.

Whence Imported.	Rags.	Old Papers.	Chemical Fibre.	Manila Stock.	
	Bs.	Bs.	Tons.	Bs.	Coils.
Antwerp	1,890	12	277	2,350	33
Barcelona	....	....	....	....	....
Bordeaux	935	....	....	....	....
Bremen	454	....	130	659	....
Bristol	92	110	....	55	267
Central America.	....	....	....	....	....
Christiania	....	....	45	....	....
Copenhagen	707	....	3,861	101	94
Genoa	....	....	....	....	....
Glasgow	....	37	....	....	....
Hamburg	3,395	....	3,475	518	15
Havre	2,950	....	....	....	....
Hull	2,502	147	....	226	81
Leghorn	603	....	....	545	....
Liverpool	530	....	....	76	302
London	576	....	....	57	178
Marseilles	829	....	....	....	....
Newcastle	....	....	....	....	....
Rio de Janeiro..	....	....	....	....	....
Rotterdam	2,304	....	1,750	1,215	357
Stettin	....	....	....	....	....
Trieste	....	....	15	....	....

IMPORTS AT NEW YORK

For the Week Ended February 15, 1911.

	Quantity.	Value.
Aniline Colors	....	.....
Bleaching Powder	504	.....
Books	....	.....
Brimstone	....	.....
Clay	....	.....
Engravings	....	.....
Gunny	....	.....
Hide Cuttings	....	.....
Newspapers	....	.....
Paper	4,361	.....
Paper Hangings	2,260	.....
Paper Stock	4,410	.....
Printed Matter	....	.....
Potash Caustic	....	.....
Soda Ash	53	.....
Soda Caustic	25	.....
Talc	....	.....
Terra Alba	....	.....
Twine	....	.....
Ultramarine	....	.....
Waste	457	.....
Wood Pulp	1,425	.....

NEW YORK IMPORTS

For the Week Ended February 14, 1911.

Paper.

R. N. Graves, Baltic, Liverpool, 54 bs. hangings.
Geo. J. Kraft, by same, 10 cs.
Geo. Goodsir, Furnessia, Glasgow, 5 cs.
Merchants Import Company, Kroonland, Antwerp, 17 cs.
C. W. Williams & Co., by same, 10 cs.
W. Seyd, by same, 10 cs.
Lunham & Moore, by same, 41 cs.
American Express Company, by same, 4 cs.
Herman Lips, by same, 80 cs.
Pritchard & Verkrusen, by same, 26 cs.
F. D. Burke, by same, 5 cs.
G. W. Sheldon & Co., by same, 4 cs.
W. Heuerman, by same, 20 cs.
G. Amsinck & Co., by same, 63 bs.
Dingelstedt & Co., by same, 28 cs.
F. B. Vandergrift & Co., by same, 2 cs.
F. J. Emmerich & Co., by same, 25 bs. wall.
W. Stursberg, Schell & Co., by same, 5 cs.
Wilkinson Brothers & Co., Hellig Olav, Copenhagen, 1,431 rolls.
American Express Company, by same, 100 bs.
Merchants Import Company, by same, 57 bs.
Dingelstedt & Co., by same, 367 bs.
D. S. Walton & Co., by same, 815 rolls, 36 bs.
G. Amsinck & Co., by same, 311 bs.
G. W. Sheldon & Co., by same, 75 bs.
C. F. Hubbs & Co., by same, 570 rolls.
Wells, Fargo & Co., by same, 18 bs.
Wells, Fargo & Co., Caroline, Havre, 7 bs.
Lunham & Moore, by same, 30 bs.
A. E. Bulkley, Adriatic, Havre, 16 bs. hangings.
R. F. Lang, by same, 41 bs. wall.
H. Bischoff & Co., Roon, Bremen, 8 cs.
The Prager Company, by same, 39 bs. wall.
E. Majert & Co., by same, 35 bs. wall.
R. F. Lang, by same, 284 bs. wall.
G. Amsinck & Co., Amdyk, Rotterdam, 65 bs.
G. W. Sheldon & Co., by same, 10 bs.
Tamm & Co., by same, 3 cs.
W. Stursberg, Schell & Co., by same, 7 cs.
H. B. Legge & Co., by same, 13 bs.
Lunham & Moore, by same, 60 bs.
R. F. Downing & Co., by same, 5 bs.
F. L. Kraemer, Campania, Liverpool, 31 bs. wall.
P. H. Petry & Co., by same, 5 bs.
R. F. Lang, California, Glasgow, 207 bs. wall.
Wells, Fargo & Co., by same, 96 bs. wall.

Rags, Paper Stock, Etc.

A. Salomon, Toronto, Hull, 327 bs. rags.
P. Berlowitz, by same, 296 bs. rags.
Castle, Gottheil & Overton, by same, 132 bs. bagging.
Marx Maier, Hellig Olav, Copenhagen, 48 bs. bagging.
Atterbury Brothers, by same, 18 bs. rags.
Marx Maier, Caroline, Havre, 151 bs. rags.
American Express Company, by same, 110 bs. rags.
Marx Maier, St. Andrew, Antwerp, 411 bs. new cuttings, 214 bs. bagging, 34 bs. rope.
Castle, Gottheil & Overton, by same, 232 bs. bagging.
Geo. W. Millar & Co., by same, 40 bs. rags.
E. Butterworth & Co., by same, 494 bs. bagging.
American Express Company, by same, 49 bs. rags.
P. Berlowitz, Floride, Havre, 101 bs. rags.
R. F. Downing & Co., Campanello, Rotterdam, 149 bs. rags, 103 coils rope.
Marx Maier, by same, 655 bs. new cuttings.
P. Berlowitz, by same, 740 bs. rags.
Marx Maier, Cincinnati, Genoa, 169 bs. bagging.
Castle, Gottheil & Overton, Roon, Bremen, 45 bs. bagging, 42 bs. rags.
Wilkinson Brothers & Co., Amdyk, Rotterdam, 115 bs. new cuttings.

Wood Pulp

Ira L. Beebe & Co., Hellig Olav, Copenhagen, 2,240 bs., 280 tons.
F. Bertuch & Co., by same, 2,480 bs., 310 tons.
E. Butterworth & Co., by same, 360 bs., 45 tons.
E. M. Sergeant, by same, 240 bs., 35 tons.
Erickson & Grant, by same, 2,240 bs., 260 tons.
American Express Company, by same, 400 bs., 50 tons.
Perkins, Goodwin & Co., by same, 800 bs., 100 tons.
R. Helwig, Amdyk, Rotterdam, 967 bs., 215 tons.
Felix Salomon & Co., Roon, Bremen, 880 bs., 150 tons.

Bleaching Powder

J. L. & D. S. Riker, Cymric, Liverpool, 262 cks.
A. Klipstein & Co., Pennsylvania, Hamburg, 192 drums.
Arnold, Hoffman & Co., Arabic, Liverpool, 50 cks.

Soda Ash

J. L. & D. S. Riker, Arabic, London, 53 cks.

BOSTON IMPORTS

From February 6 to February 13, 1911, inclusive.

Paper, Books, Etc.

E. C. Welch, Lancastrian, London, 1 cs. wall paper.
Morris European Express Company, by same, 1 cs. paper.
American Express Company, by same, 1 cs. paper, 1 cs. books.
W. W. Bevan & Co., by same, 3 cs. paper.
Potter Drug and Chemical Company, Columbian, London, 1 cs. paper.
W. H. Guild & Co., by same, 5 cs. books.
F. H. Griffin, by same, 2 cs. paper.
Fredk. Leyland & Co., by same, 1 cs. paper.
Carter, Rice & Co., Pretoria, Hamburg, 71 cs. paper.
American Express Company, by same, 20 cs. paper, 4 cs. books, 639 reels paper.
Merchants Importing Company, by same, 2,014 bs. paper.
H. B. Legge & Co., by same, 165 cs. paper.
B. D. Webber, by same, 6 cs. papers.

Paper Stock

International Purchasing Company, Lancastrian, Liverpool, 413 coils manila rope.
Train, Smith Company, by same, 192 bs. waste paper.
Henry Kunch & Co., Columbian, London, 50 bs. paper stock.
Edwin Butterworth & Co., by same 79 bs. bagging.
International Purchasing Company, by same, 520 coils manila rope.
F. W. Bird & Son, by same, 147 bs. waste paper.
American Express Company, by same, 83 bs. rags.
Fredk. Leyland & Co., by same, 86 bs. waste paper.
R. F. Downing & Co., Iberian, Manchester, 112 bs. new cuttings.
Train, Smith Company, by same, 113 bs. rags, 223 bs. new cuttings.
Edwin Butterworth & Co., by same, 173 bs. new cuttings, 763 bs. waste paper, 36 bs. twines, 1,221 bs. bagging.
Felix Salomon & Co., Pretorian, Glasgow, 240 bs. rags.

Hide Cuttings

Thomas Griffiths & Co., Lancastrian, Liverpool, 135 bags.
Train, Smith Company, Iberian, Manchester, 107 bags.

Wood Pulp

Page, Newell & Co., Columbian, London, 400 bs.
Felix Salomon & Co., Pretorian, Hamburg, 4,596 bs.
E. M. Sergeant, by same, 500 bs.
Fredk. Bertuch & Co., by same, 200 bs.
Page, Newell & Co., by same, 3,060 bs.
M. Gottesman & Son, by same, 620 bs.
Order, by same, 400 bs.

Bleaching Powder

Linder & Meyer, Lancastrian, Liverpool, 36 cks.
J. L. & D. S. Riker, by same, 33 cks.
A. Klipstein & Co., Pretorian, Hamburg, 281 cks.

PHILADELPHIA IMPORTS

Scandinavian-American Trading Company, Louisiana, Copenhagen, 400 bs., 50 tons wood pulp.

NEWPORT NEWS

Scandinavian-American Trading Company, Barcelona, Hamburg, 800 bs., 100 tons wood pulp.

The Forest Service, Department of Agriculture, has issued "The Use Book" for 1911, devoted to the subject of water power. It contains the water power regulations of the department, with all the accompanying blank forms, in respect to permits and other information as to the acquisition and use of water power.

"Motion Study" is the title of an interesting work by Frank B. Gilbreth, member of the American Society of Mechanical Engineers, with an introduction by Robert Thurston Kent, editor of Industrial Engineering. The D. Van Nostrand Company, Murray and Warren strets, New York, are the publishers. The book aims to call attention to the energy wasted in many fields of labor, which, by a little thought and ingenuity, could be conserved and applied to the further advancement of the work on hand. Brick laying is used in explaining efficiency and inefficiency. The book is illustrated by half-tones and line drawings. It is offered by the publishers at $2 net.

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(Formerly of Dean & Main)
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We can be of service to the purchaser by showing him whether he is getting what he has specified.
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Architects and Engineers.

CAREY, JAMES L., Paper Mill Engineer. New Mills. Improvements in Old Mills. Appraisals. 5308 Washington Boulevard, Chicago, Ill.

THE FIBRE DEVELOPMENT COMPANY, Appleton, Wis. Power, Pulp, Paper Engineers. Advisory and Consulting Engineers.

HARDY, GEO. F., M. Am. Soc. M. E., Consulting Engineer. 309 Broadway, New York.

KIMBALL, HERBERT S., M. Am. Soc. C. E., and R. O. SWEEZEY, A. M. Can. Soc. C. E., Mill and Forestry Engineers, 46 Cornhill, Boston, and 39 John St., Quebec.

PRIDE, CHAS. B., Mill Architect and Hydraulic Engineer. Specialties: Paper and Pulp Mills. 508 Columbia Building, Spokane, Wash.

SNOW, S. M., Mill Architect, Engineer. Paper and Pulp Mills. Steam and Water Power Plants. 85 Water St., Boston, Mass.

STEBBINS ENGINEERING AND MFG. CO., Architects and Engineers. Paper, Pulp, Soda, Sulphate and Sulphite Mills. Power Developments. 39-40 Smith Bldg., Watertown, N. Y.

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HEMINGWAY, WM., R., 31 South Third St., Philadelphia, Pa.

HILLS, GEO. F., 108-112 Cliff Street, New York.

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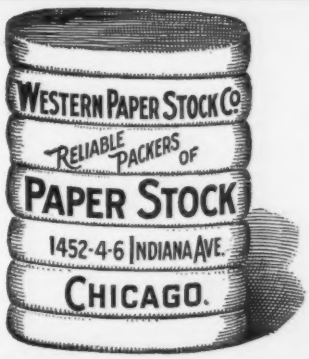
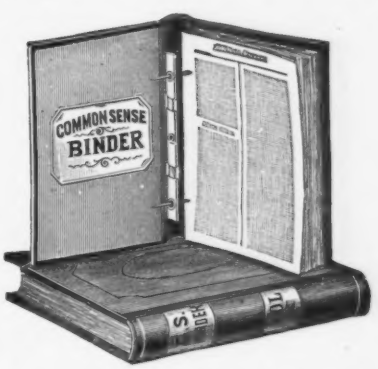
NEWARK PARAFFINE AND PARCHMENT PAPER COMPANY. Makers of WAXED Papers. 90 West St., New York.



A BINDER

FOR THE

Paper Trade Journal



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BEATERMAN WANTED for cylinder tissue mill about 100 miles from New York city; wages, $2. Address Beaterman, care Paper Trade Journal.

SUPERINTENDENT WANTS POSITION—Twenty-five years' experience on all grades box boards, wood board, oyster pail, manilas, tag, container boards, etc.; at present employed as superintendent. Address D. E. F., care Paper Trade Journal.

POSITION WANTED AS SALESMAN, sectional representative, or sales manager for wrapping paper mill, by young man; ten years' experience in sales department of present employers; reliable, energetic, ambitious; desires wider field for work and better opportunity; communications confidential. Address N. L. O., care Paper Trade Journal.

POSITION WANTED as superintendent in mill making boards and wrappings; steady, sober; best references; can get results; at present employed, but desires change. Address T. R. M., care Paper Trade Journal.

AN EXPERIENCED COLOR MIXER wanted for coating mill; must be familiar with coating for lithograph, half tone, glazed, waterproof and skytogen papers; state experience and salary expected. P. O. Box 1454, Springfield, Mass.

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One four cylinder machine with thirteen 60x36 inch dryers and one Moore & White Duplex Cutter. This machine is located in the mill of William Pemble & Sons at Stillwater, N. Y. We offer this at a great bargain provided it is sold before removal.

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POSITION WANTED as boss machine tender or assistant superintendent; first class experience keeping machine in repair; married, sober and steady. Address Boss Machine Tender, care Paper Trade Journal.

CYLINDER MACHINE TENDER wishes to make change; extensive experience on all kinds board; young, steady and strictly temperate; best reference. Address Steady, care Paper Trade Journal.

SWEDISH ENGINEER, twenty-six years of age, wants situation as draughtsman or assistant to engineer at paper or wood pulp mill; four years' practical experience in wood pulp and paper manufacture in Sweden, and for the last twelve months draughtsman with an engineering firm in England, whose specialty is paper making machinery; first class references. Address Draughtsman, care Paper Trade Journal.

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MANAGER—SUPERINTENDENT, twenty years in charge of mills making all grades book, loft dried writing, manilas, tissues, kraft, boards, colors and specialties, wishes to change; age, forty-five; best of references. Address S. V., care Paper Trade Journal.

AGENCY WANTED on book paper for New York, Philadelphia, by salesman familiar with trade in both markets. Address A. B. C., care Paper Trade Journal.

YOUNG MAN EXPERIENCED IN SULPHITE MILL WANTS POSITION as superintendent or assistant; up to date on all grades sulphite; best references. Address M. S., care Paper Trade Journal.

MANAGER OF PULP AND PAPER MILLS, desirous of making change shortly, wants similar position; good commercial knowledge and executive ability; extensive practical experience in the manufacture of ground wood, sulphite and soda wood pulps, and various grades of papers therefrom. Address Box 14, care Paper Trade Journal.

POSITION WANTED AS BOSS MACHINE tender or night boss; twenty years' experience; good hustler keeping machines in repair; married, steady, sober. Address Paper Maker, care Journal.

FOR SALE

ONE 82-in. Cylinder Machine with nine dryers, one stack calender, reel, slitter and winder, Marshall drive. One 92-in Cylinder Machine, nine dryers, one stack calender, reel, slitter and winder, Marshall drive. Beaters—Four 1,000 lb. Iron Tub. Screens—Six 8 plate, two 10 plate, one 12 plate. Corliss Engines—One 20 in. x 48 in., one 20 in. x 40 in. x 48 in., one 14 in. x 26 in. x 42 in., one 14 in x 36 in.

THOMAS W. KNEELAND, Rochester, N. Y.

FOR SALE

At a bargain, one 12 in x 12 in. Knowles Vertical Triplex Geared Stuff Pump. Used but a short time.

Black Clawson Co.,
Hamilton, Ohio.

FOR SALE

One 100 Inch Black & Clawson Fourdrinier Machine.

Two Horne Latest Type 50 Inch Leather Board Machines.

Five 500 Lbs. Horne Double Lighter Beaters.

Two 52 Inch Board Calenders.

Four 36 Inch Hunberry Fans.

One Hydraulic Press.

FRANK H. DAVIS
No. 75 Crescent Ave., No. Cambridge, Mass.

CYLINDER PAPER MACHINE WANTED—Complete to trim 72 inches or wider. Address P. M. Co., care Paper Trade Journal.

MILL AGENCY WANTED for Philadelphia and vicinity; loft and machine dried writings, bonds, etc.; established trade exceptional. Address C. H., care Paper Trade Journal.

FOR SALE

BEATERS—Two 44x36 Horne, two 44x44 Horne, two 48x60 Horne patent, two 54x48 Emerson, one 70x54 Dillon, four 36x36 iron, six 40x40 iron.
CALENDERS—48 in., 54 in., 56 in., 58 in., 62 in., 68 in., 72 in., 76 in. and 80 in. machine calenders; 36 in., 42 in., 45 in. and 84 in. supercalenders; 15x40 and 16x52 board calender, almost new, Farrell make.
CONES—One pair 10x20x54 in. iron, one pair 24x38x84 in. iron.
COUCH ROLLS—Two 14½x78 in. face Hoffman.
CUTTERS—54 in. Black-Clawson, 62 in. Horne, 72 in. Black-Clawson, 74 in. Dillon, 84 in. Dillon roll cutters; 96 in. Black-Clawson double roll cutter; 38 in., 44 in., 48 in. and 54 in. ream cutters. Four Daniels rag cutters.
CYLINDER MOULDS—Two 28x50, two 30x44, three 30x75.
CYLINDER WASHERS—A lot of good ones.
DIGESTERS—One Stevens and two 7x22 ft. upright.
DRYERS—Nine 28x44, three 28x48, three 28x56, twenty-three 28x69, four 28x72, eight 36x64, eleven 36x72, forty-seven 36x80, four 48x74.
DUSTERS—Two four-bowl railroad, one E. D Jones and one Pusey & Jones thrasher.
EVENERS—Two large Mellor patent eveners.
JORDANS—Two Emerson, two Horne, two Black-Clawson, two Jones and two Marshall.
KOLLERGANG—One Ernest Hoffman, No. 3.
MACHINES—48 in., 60 in., 62 in., 64 in., 68 in. and 80 in. cylinder machines; 52 in., 62 in., 72 in. and 84 in. wet machines.
PRESS—One 120 ton and one 350 ton hydraulic press.
PRESS ROLLS—36 in. to 100 in. face.
PUMPS—One 6x7 Pusey & Jones triplex and 4 in. duplex suction pumps. Three 5 in. and four 7 in. single plunger stock pumps. One 5 in. duplex, one 5 in. triplex and one 8 in. triplex stock pumps; 2 in. and 3 in. triplex boiler feed pumps. One 4 in. Rumsey rotary fire pump.
REELS—One 72 in. and one 120 in. upright reels; one 74 in., one 84 in. and two 108 in. revolving reels; one automatic expansion reel.
ROTARIES—7x22 ft., 7x20 ft., 6x10 ft., 6x16 ft., 6x14 ft. Globes, 6x20 ft.
SCREENS—Three 8 plate, three 10 plate, two 12 plate.
SHAFTING—300 ft. 5 7-16, 125 ft., 4 15-16, 125 ft. 4 7-16, 300 ft. 1 15-16 turned steel shafting with hangers and couplings.
STEAM ENGINES—25 to 600 H. P. engines of different makes and styles.
WINDERS—One 2 shaft Manning, one 3 shaft Black-Clawson, one 80 in. single drum.

MILLS MACHINE CO., Lawrence, Mass.

WANTED

Old Brass Wire Cloth, Scrap Brass, Second-hand Soda Ash, and all other kind of second-hand bags.

Will be pleased to quote prices. Write to

THEODORE HOFELLER & COMPANY

206-220 Scott St., BUFFALO, N.Y.

PULPWOOD

Parties desiring to contract for a supply of Peeled or Rossed Pulpwood, or wishing to purchase Pulpwood limits, will find it to their interest to apply to the

CANADIAN PULPWOOD CO.,

43 Victoria Street Toronto, Ont.

H. C. CLARK & SON MACHINE CO.

Manufacturers of **Paper Mill Machinery,**

LEE, MASS.

Revolving Paper Cutters,
Rag Cutters,
Cylinder Paper Machines,
Washing and Beating Engines,
Chilled Iron and Paper Calenders,
Fan and Stuff Pumps,
Engine Roll Bars and Bed Plates,
Cylinder Molds, Marshall Drives,
Slitters and Rewinders, Reels,
Dryers with Improved Packing Boxes,
Wet Machines,
Gun Metal and Rubber Rolls,
Rolls Reground

Envelope Manufacturers

The patent for a new style envelope which secures a quick, insured opening (no wire or other attachments), very attractive, is for sale.

Kindly address your communication to

PATENT

Care **Paper Trade Journal**

WANTED

Superintendent for a large coarse paper mill. Preference will be given to man under 30 years, a graduate of an American technical school, and with 4 or 5 years' mill experience. Give full particulars and references. Address W. F., care Paper Trade Journal.

FOR SALE. Stock in trade, fixtures and good will of E. Morrison Paper Co., 1009 Pennsylvania Avenue, N. W., Washington, D. C. This is the oldest establishment carrying on a wholesale and retail stationery and paper business in the District of Columbia. For full information, inquire of

CHAPIN BROWN, Trustee,
323 John Marshall Place,
Washington, D. C.

The American Paper & Pulp Association

has established a

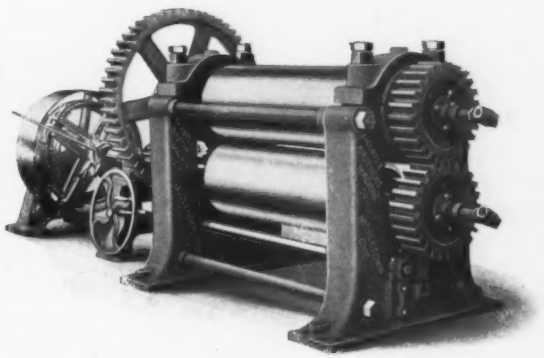
LABOR BUREAU

at its office,

50 CHURCH STREET

NEW YORK CITY

where paper makers may file their application if in want of positions and employers may hear of men desiring positions. We invite full use of the Association's facilities, which will be without charge.



The Best Compound Geared Board Calenders on the Market.

Shartle Bros. Machine Co.

MIDDLETOWN, OHIO

Vernon Brothers & Co.

PAPER

OF ALL KINDS

66 & 68 Duane Street - New York

The Mathieson Alkali Works

SALTVILLE, VA.

Castner Electrolytic Alkali Co.

NIAGARA FALLS, N. Y.

"EAGLE-THISTLE" BRAND

BLEACHING POWDER

HIGH TEST

Packed in Steel Drums, air tight, insuring full strength at point of consumption.

SODA ASH.

48 per cent. and 58 per cent.

CAUSTIC SODA.

60 per cent., 70 per cent., 72 per cent., 74 per cent., 76 per cent.; also 78 per cent.
Our 78 per cent. Caustic Soda is an article of greater purity than has ever before been produced in a commercial way, analyzing 99.70 Hydrate of Soda.

BICARBONATE OF SODA.

Packed in Kegs, Barrels or Bags; also Cases.

ARNOLD, HOFFMAN & CO.

INCORPORATED

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PROVIDENCE:
55 Canal Street

NEW YORK:
32 Broadway

BOSTON:
147 Milk Street

PHILADELPHIA:
117 S. Front Street

MARKET REVIEW

Office PAPER TRADE JOURNAL,
WEDNESDAY, February 15, 1911.

FINANCIAL.—Money on call at the Stock Exchange today opened at 2⅜ per cent., highest 2½, lowest 2¼, closing at 2¼ per cent. Most of the loans were made at 2⅜ per cent.

Time money showed no especial change from last week. The market was dull, with light offerings and small demand. Rates, 3 per cent. for sixty days, 3¼@3½ for ninety days, 3¼@3½ for four months, 3½@3¾ for five and six months. The latest quotations on trade securities are as follows:

	Bid.	Asked
American Writing Paper Company, 5s	89½	90
American Writing Paper Company, com	1¾	2¾
American Writing Paper Company, pref	31	31½
International Paper Company, com	10½	10¾
International Paper Company, pref	49	49½
International Paper Company, 6s	100¼	—
International, 5s	85½	—
Union Bag and Paper Company, com	8¼	9
Union Bag and Paper Company, pref	58	59½
United Box Board Company, com	5¾	6
United Box Board Company, pref	13¼	13½
United States Envelope Company, com	51	54
United States Envelope Company, pref	111	116

PAPER.—Nothing new in the paper market has developed during the past week. The market for nearly all grades is steady, but without snap. The demand for the lower grades of stock is sluggish. The Box Board situation has not changed, and most of the mills have been able to sustain the recent advance in prices. The market for News Print and Book paper is well sustained, while Wrappings, Writings and Ledgers continued to do a good business. We quote:

Bonds	6	@	40
Ledgers	9	@	20
Writing—			
Superfine	11	@	11½
Extra fine	11	@	17
Fine	7½	@	9
Fine, No. 2	7	@	8
Engine Sized	6	@	7½
Book, S. & S. C.	4.00	@	—
Book, M. F.	3.87½	@	4.00
Book, Coated	5¾	@	7½
Coated, Lithograph.	5¼	@	8
News, f. o. b. mill (contract renewal)	2.05	@	2.15
News (transient business), rolls	2.05	@	2.25
Sheets	2.05	@	2.30
Side Runs	2.05	@	2.30
Label	5½	@	9
Kraft—			
No. 1 Domestic (all sulphate)	4½	@	4¾

Kraft—			
No. 2 Domestic	3.85	@	4¼
Imported	4¼	@	4¾
Manila—			
No. 1 Jute	4¾	@	5
No. 2 Jute	4.37½	@	4.50
No. 1 Wood	2.65	@	3.15
No. 2 Wood	2.30	@	2.60
Butchers'	2.10	@	—
Fibre Papers	2.25	@	2.50
Tissues—			
White and Colored, 20x30	45	@	47½
Manila No. 1, 24x36	47½	@	50
No. 2 White, 20x30	32	@	35
Common Bogus	1.40	@	1.60
News board, ton	30	@	32
Straw Board, ton	25	@	28
Chip Board, ton	25	@	28
Paper Stock Boards	27	@	30
Wood Pulp Board	40	@	42

WOOD FIBRES.—The demand for Foreign Sulphite remains unchanged. Prices on most grades of Bleached and Unbleached continue at the previous range. In the Domestic Sulphite market business is of moderate proportions, and the mills are seasonably busy. We quote:

Sulphite, foreign—			
Bleached, ex dock	2.50	@	2.90
Unbl'h'd, ex dock	1.80	@	2.40
Sulphite, domestic—			
Bleached	2.60	@	2.80
Unbleached	2.00	@	2.05
Soda, Domestic—			
Bleached	2.10	@	—

Soda, foreign—			
Unb'd Spruce, ex dock	1.90	@	2.25
Bleached, ex dock	2.90	@	3.25
Imported Kraft pulp	1.95	@	2.10

WOOD PULP.—The demand for ground wood continues to keep pace with supplies. Water conditions have improved, particularly in the East, but stocks are still low. Prices remain firm at $24@30 a ton delivered.

BAGGING.—Advances in the price of raw material have resulted in practically withdrawing Gunny Bagging from the paper stock market. As it is now quoted at $1@1.10 very little of it finds its way into the hands of paper mill supply dealers, available supplies being remanufactured into lower grades of bagging. Changes are noted in Gunny No. 1, Manila Rope, foreign and domestic, and New Burlap Cuttings. We quote:

Gunny, No. 1—			
Domestic	1.00	@	1.10
Foreign	85	@	90
Mixed Bagging	50	@	60
Wool Tares, light	1.00	@	1.05
Wool Tares, heavy	1.05	@	1.10

Manila Rope, foreign	2.30	@	2.40
Domestic Rope	2.40	@	—
New Burlap Cuttings	1.40	@	1.50
Flax Waste	1	@	2
Flax Waste, washed	1½	@	2

FOREIGN RAGS.—The movement is rather slow, as orders are mostly for immediate or nearby requirements. Prices remain as follows:

New White Cuttings	5¼	@	5½
New Light Flannelette Cuttings	3¾	@	5
New Unbleached Cottons	5	@	5¼
New Light Silesias	4	@	4¼
New Coarse Brown Linens	3½	@	3¾
New Dark Flannelette Cuttings	2¼	@	2½
New Black Cottons and Linens	1¼	@	1½
German Blue Cottons	1.35	@	1.45
Dutch Blues	1.50	@	1.60
Light Print	1.40	@	1.75

New Mixed Cuttings	1¾	@	2¼
New Light Cuttings	3¼	@	3½
Old Linen, White	4½	@	5½
Old Light Prints and Checks	1¼	@	1½
Old Selected Fines	2½	@	2¾
Old No. 1 Seconds	1.60	@	1.80
Old Dark Cottons	55	@	65
Old Russian Linen Rags	3¼	@	3½
Old Linen, Gray	2¼	@	4
German Colored Cottons	⅞	@	1½
Old Linen Blues	2	@	2¾
Dark Colored Cottons	60	@	70

DOMESTIC RAGS.—The demand for most grades is about normal, but the market is without special feature. A slight advance is noted in Tailors' Rags. We quote:

New White Shirt Cuttings, No. 1	5	@	5½
No. 2	3¼	@	3¾
Fancy Shirt Cuttings	3½	@	3¾
New Blue Cotton	2¼	@	2¾
New Mixed Cottons	1.25	@	1.40
New Black Cottons, Soft	1.50	@	1.75
New Light Seconds	2.50	@	3.25

New Black Cottons, Mixed	1.00	@	1.10
No. 1 Whites	3	@	3¼
Soiled Whites, street	1.00	@	1.10
Soiled Whites, house	1.60	@	1.75
Thirds and Blues	1.25	@	1.40
Satinette Garments	75	@	80
No. 3 Satinettes	65	@	70
No. 4 Satinettes	50	@	55
Tailors' Rags	45	@	50
Hard Back Carpets	45	@	50

OLD PAPERS.—Recent reductions in prices on the lower grades have not stimulated demand, and most grades move but slowly. There has been no change during the interval, and prices remain at previous levels, as follows:

No. 1 Hard White Shavings	2.25	@	2.40
No. 2 Hard White Shavings	1.90	@	2.00
No. 1 Soft White Shavings	1.80	@	1.85
No. 1 Col'd Shav's.	65	@	70
No. 2 Col'd Shav's.	50	@	55
No. 1 Flat Stock	60	@	65
No. 1 Crumpled Sheet Stock	60	@	65
Solid Ledger Stock	1.55	@	1.70
Ledger Stock	1.35	@	1.45
No. 1 White News	1.15	@	1.20
Extra New Manila Cuttings	1.45	@	1.50
New Manila Cuttings	1.10	@	1.25

No. 1 Old Manila	75	@	80
No. 2 Old Manila	37½	@	42½
New Box Board Chips	40	@	45
Bogus and Mill Wrappers	55	@	60
Strictly Overissue News	60	@	65
Strictly Folded News	50	@	55
Broken News	32½	@	35
No. 1 Mixed News	45	@	55
Mixed Straw and Other Boxes	40	@	—
No. 1 Mixed Paper	27½	@	30
Common Papers	20	@	25

TWINE.—Recent advances in the cost of raw materials, particularly in jute, has caused a silght advance in some grades of the finished product. The demand is of seasonable proportions. We quote:

Jute Rope	7	@	6¾
Jute Wrappings, 2 to 6 ply—			
No. 1	9	@	—
No. 2	8	@	—
Finished Indias—			
Jute Twines, 18.	11	@	—
Jute Twines, 24.	10½	@	—
Jute Twines, 36.	10	@	—
Jute Twines, 48-60	9½	@	—
Jute Twines, 4½.	8½	@	—
Jute Twines, 6..	8½	@	—
Jute Twines, 7..	8	@	8½

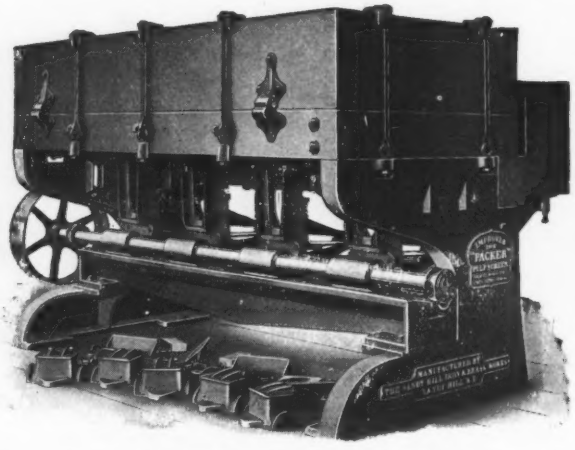
Marline Jute, 8 & 9	7	@	8
B. C. Hemp, 18	16	@	16½
B. C. Hemp, 24	15½	@	16
B. C. Hemp, 36	15	@	15½
B. Hemp, 18	17	@	—
B. Hemp, 24	16½	@	—
B. Hemp, 36	16	@	—
Mixed Hemp, 8 & 9	11	@	12
Amer. Hemp, 4½	13	@	—
Amer. Hemp, 6	13	@	—
Sisal Hay	7	@	—
Sisal Latin Yarn	6½	@	—

Philadelphia Markets

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, February 13, 1911.—Quotations have not declined during the week from the low estate to which they fell a week ago; but on nearly all the grades, and especially on Book stock and Commons, the inside prices are more prevalent than the outside, low even as the outside are. The stock jobbers can understand why with the market glutted with boards there is no demand for Commons, Mixed and News, but it is surprised that Book stock is also a drug on the market. While the better grades of stock, as White Shavings, still enjoy a steady demand, Book stock almost goes begging. One large dealer had offers rejected at mar-

COMPARE THE OPEN SIDE OF THE PACKER NEW OPEN SIDE SCREEN



The cut shows the OPEN SIDE Screen with Box Caps and Bumper Blocks removed, and Cam Shaft ready to take out sidewise.

with any other and the reason for its unexampled popularity will be clear.

Box caps and bumper blocks may be removed and cam shaft uncoupled and taken out of the Screen instantaneously and without any trouble whatever.

But there are many other exclusive features of The Packer which help to make it the favorite.

It is made with fewer parts than any other Screen.

The manner of clamping the screen vat to the frame underneath permits of the vat being readily raised for cleaning without taking out any bolts.

An improved spring and lever device in the plunger compels the shoes to run smoothly on the cams.

Since beginning the manufacture of the Packer Open Side Screen in 1907 we have sold **808.** Our sales for 1910 up to September 1 are **213** Screens. This shows the wonderful popularity of this Screen among the pulp and paper mills.

THE SANDY HILL IRON AND BRASS WORKS

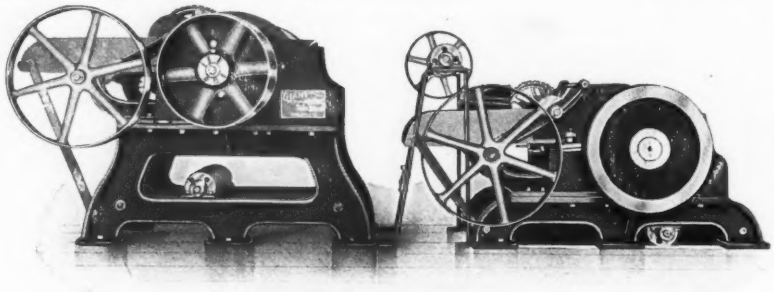
HUDSON FALLS, FORMERLY SANDY HILL, N. Y.

GOOD CROPS GOOD BUSINESS

YOU WILL NEED ALL YOUR CAPACITY THIS WINTER

PUT IN A **GIANT** RAG CUTTER

CUT MORE STOCK CUT IT BETTER CUT IT CHEAPER



SIX MILLS HAVE RECENTLY INSTALLED OUR STYLE B. (Shown above)
MANILA, COVERS, BLOTTING, ROOFING

THIS IS JUST ONE OF THE **GIANT** FAMILY—THERE ARE 14 MORE
IT WILL COST ONLY A STAMP TO FIND OUT WHAT A "GIANT" WILL SAVE YOU

TAYLOR, STILES & CO., Riegelsville, N. J., U. S. A.

Canadian Manufacturers Under Patents:
WATEROUS ENGINE WORKS CO., Brantford, Ont., Canada

Western Agents:
THE WILLIAMS-GRAY CO., 162 Washington St., Chicago, Ill.

ket rates for the first time this week in many months. It is also reported that New York is sending into this market much Commons and Mixed, and this, of course, tends to keep prices down in the absence of a great demand. Far better conditions than these had been anticipated; no one clearly understands why the slump is here, and even the more hopeful are a little uncertain about the early resumption of activity. Quotations then follow, but with inside prices prevailing:

PAPER AND BOARD.

Bonds (new rags)..	20	@	40	Label	6¼	@	9
Bonds (imitation)..	6	@	10	News	2.25	@	3.00
Ledgers (all new rags)	14	@	20	No. 1 Jute Manila.	5½	@	6
Ledgers (imitation).	6	@	14	Manila Sulph., No. 1	2.75	@	3.00
Writing—				Manila, No. 2.....	2.50	@	2.75
Superfine	12	@	15	Common Bogus....	1.75	@	1.90
Extra Fine.....	9	@	11	Straw Board, ton..	25	@	26
Fine	7	@	9	News Board, ton...	30	@	32
Fine, No. 2.....	7	@	8	Chip Board.....	26	@	27
Fine, No. 3.....	6	@	7	Wood Pulp Board..	37	@	40
Book, S. & S. C...	4	@	6	Felts—			
Book, M. F.....	3¼	@	5¼	Regular 30.00		@	33.00
Book, Coated.....	5	@	8¼	Slaters' 33.00		@	36.00
Coated Lithograph.	6¼	@	8	Best Tarred, 2 ply	45	@	48
				Best Tarred, 3 ply	65	@	68

BAGGING.

Gunny, No. 1—				Wool Tares, heavy.	1.05	@	1.10
Foreign	70	@	80	Wool Tares, light..	1.00	@	1.05
Domestic	70	@	75	Manila Rope, No. 1	2	@	2¼
Scrap Bagging.....	60	@	70	New Burlap Cuttings	1¾	@	2

OLD PAPERS.

Shavings—				No. 2 Books, light.	55	@	60
No. 1 Hard White	2.10	@	2.15	Extra No. 1 Manilas	75	@	80
No. 1 Soft White	1.75	@	1.85	Folded News (over-issues)	50	@	55
No. 2 Soft White	1.10	@	1.15	Old Newspapers....	40	@	45
No. 1 Mixed....	80	@	85	Mixed Papers.....	30	@	35
No. 2 Mixed....	60	@	65	Commons	20	@	25
Ledgers & Writings	1.40	@	1.45	Straw Clippings....	35	@	40
Solid Books.....	75	@	80	Binders' Clippings..	35	@	40
New Manila Cuttings	1.25	@	1.30				
Crumpled Manila...	65	@	70				

E. R. G.

Chicago Markets

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, February 13, 1911.—There has been quite a demand during the past week for Bond, Writing and Book paper, and the market has been firm on these lines. The Manila and Fibre markets have been inclined to weakness, but prices have been maintained at previous quotations. Old paper stocks have continued to move quite freely in nearly all grades at previous quotations, and fluctuations have been only slight and temporary. The quotations now stand as follows:

PAPER AND BOARD.

Bonds	5	@	40	Label	6½	@	9
Ledgers	6	@	20	News	2.40	@	3.20
Writing—				Manila—			
Superfine	11	@	16	No. 1 Manila....	2.40	@	—
Extra Fine.....	9½	@	11	No. 1 Fibre.....	2.50	@	—
Fine	7	@	9	No. 1 Jute.....	5	@	6
Fine No. 2.....	7	@	8	Sulphite No. 1...	3½	@	4½
Book, S. & S. Co..	4	@	6	Common Bogus....	2.25	@	2.50
Book, M. F. S....	3½	@	4½	Straw Board (ton).	25.00	@	27.00
Book, Coated.....	5 1-10	@	7½	News Board (ton).	33.50	@	35.00
				Wood Pulp Board..	35.00	@	42.50

OLD PAPERS.

Shavings—				No. 2 Books, light.	50	@	60
No. 1 Hard White	2.10	@	2.25	Extra No. 1 Manilas	1.25	@	1.30
No. 1 Soft White	1.90	@	2.00	No. 1 Manilas.....	80	@	85
No. 2 Soft White	1.20	@	1.40	Folded News (over-issues)	65	@	70
No. 1 Mixed.....	60	@	75	Old Newspapers....	60	@	65
No. 2 Mixed....	55	@	60	Mixed Papers.....	50	@	55
Ledgers & Writings	1.40	@	1.50	Straw Clippings....	35	@	40
Solid Books.....	95	@	1.05	Binders' Clippings..	40	@	45
No. 1 Books.....	95	@	1.00				
Blanks	—	@	1.25				

THOMPSON.

New York Miscellaneous Markets

BLEACHING POWDER.—The demand from the paper trade is normal, the movement being chiefly against standing contracts. Spot goods are available at 1.25c. Contracts over the year for standard goods are being closed at 1.25c.

SAL SODA.—The movement continues to be chiefly against standing contracts. The paper trade is taking a normal quantity Quotations remain at 60c. and upward f. o. b. for barrels, less the usual discount terms. Spot lots of Concentrated are available at 1⅜c. and upward, according to quality and terms of sale.

CAUSTIC SODA.—The demand from the paper trade and other consuming industries is said to be normal. Car lots are available at 1.72@1.80c., according to test.

SODA ASH.—The market continues steady, with the movement chiefly against standing contracts. Many of the paper manufacturers are covered by contracts over the year. Light 58 per cent. in bags is quoted at 75c. in car lots, and less than car lots up to 85c. on the basis of 48 per cent. f. o. b. works. Barrels are held at 82½c.@$1, as to quantity; the inside figure is for car lots.

TALC.—The market is firm and prices remain unchanged as follows: $33@40 per ton for French and $47@50 for Italian.

BLUES.—A fair market is reported. For Ultramarine the prices remain the same at 5@15c., according to quality, quantity and seller.

BARYTES.—The market is somewhat more active and prices are firm at previous levels, as follows: $18.50@22.50 a ton for Foreign Prime White, $16@17 for Domestic Prime White and $10@13 for off grades.

CHINA CLAY.—The movement is chiefly against standing contracts, and the paper mills are taking their usual requirements. Prices remain at $11.50@18 a ton for Foreign and $8@9 for Domestic.

ALUM.—The paper mills are said to be taking seasonable requirements on contract and the movement is chiefly through these channels. Goods are sold on the basis of 1.75@2c. for Ground and 2¾@3c. for Powdered, as to quantity, seller and terms of sale.

BRIMSTONE.—The demand is good and prices steady, the movement being chiefly on contract goods, with fair demand for additional lots. Prices range from $22@22.50.

CAUSTIC POTASH.—The movement is chiefly on contract goods and prices remain steady. Dealers quote 3¾@5¾c. for Ordinary 45 to 90 per cent.; Electrolytic 90 per cent. (new process) is held at 5⅛@5½c., according to quantity.

ROSINS.—There has been an improvement in demand during the past week and prices are ruling higher. We quote: Common to good strained, $7.25; B, $7.50; D, $7.55; E, $7.55; F, $7.57½; G, $7.60; H, $7.65; I, $7.70; K, $8.15; M, $8.40; N, $8.45; W G, $8.50; W W, $8.55.

STARCH.—The movement is of fair proportions, but not so large as might be expected with the low prices that prevail. Consumers seem to be contracting only for nearby needs. Prices have not changed during the interval. We quote: Pearl starch, bags $1.37; barrels $1.53; Buffalo pearl starch, bags $1.39½; barrels $1.55½; powdered starch, bags $1.42; barrels $1.58; Buffalo corn starch, bags $1.44½, barrels $1.60½; C. P. special warp sizing starch, 140 pounds, bags $1.47; crystal T. B. starch, bags $1.67; barrels $1.83; T. B. pearl starch, bags $1.52, barrels $1.68, per 100 pounds. These quotations are for carload quantities ex dock New York city.

Proposals for Toilet Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 13, 1911.—The Commissioner of Indian Affairs is inviting proposals to be opened in Chicago on March 21, 1911, 2 p. m., for 61,470 rolls toilet paper, in rolls of 1,000 sheets, 4½x5½ inches. A. F. T.

Newfoundland Is Prosperous

ST. JOHNS, N. F., February 13, 1911.—Declaring that the past year had been the most successful in the history of the colony, and emphasizing his statement by figures showing the revenue surplus to have been greater than ever before, the Colonial Governor, Sir R. C. Williams, K. C. M. G., was warmly applauded during his address at the opening session of the Legislature last Wednesday.

The outlook for the future, Governor Williams declared, was never brighter. He spoke particularly of the success which has been attained in the pulp and paper industry.

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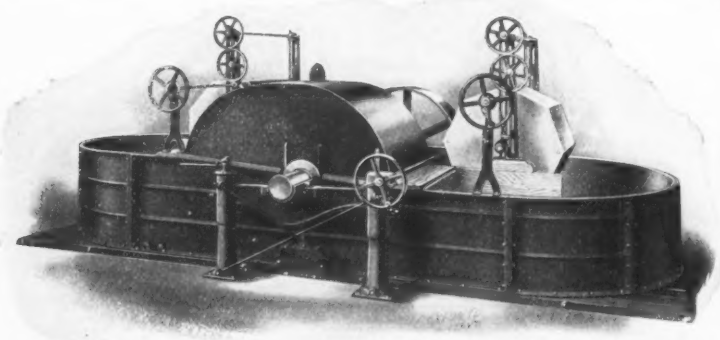

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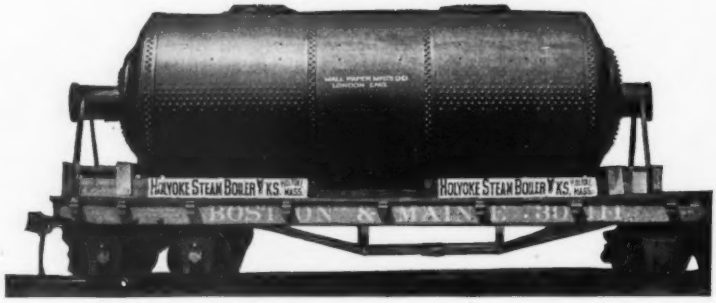

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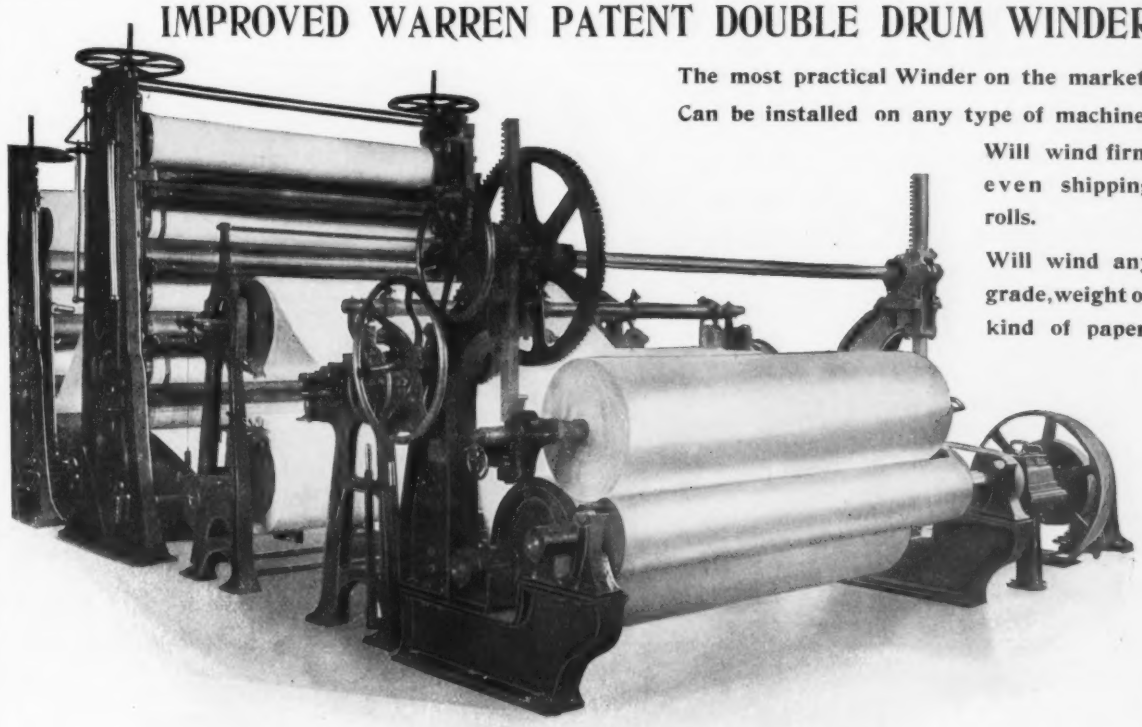

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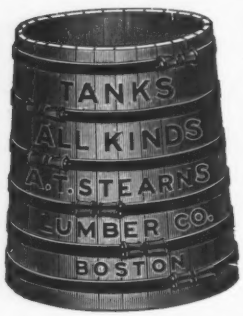

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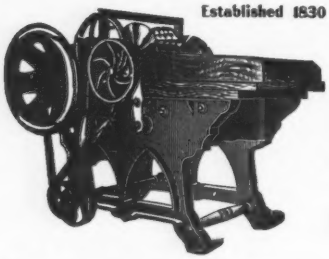

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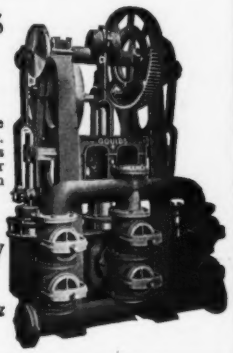

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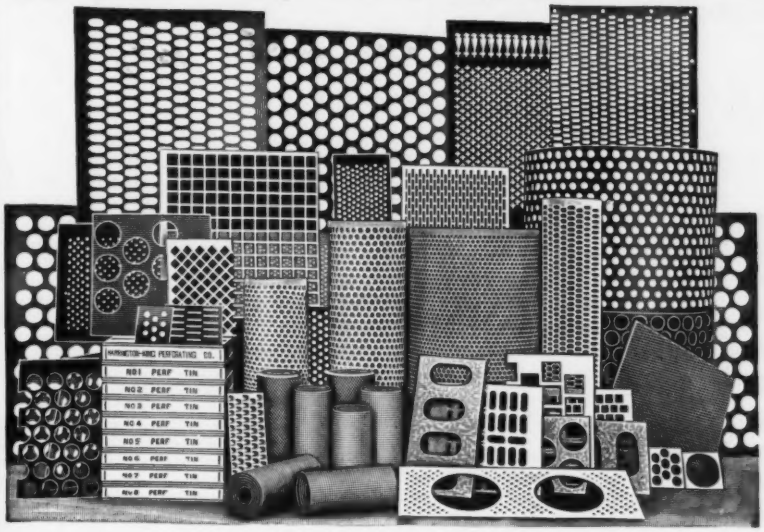

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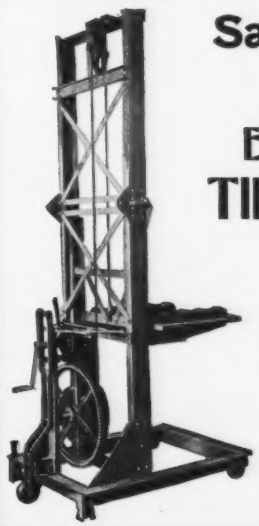

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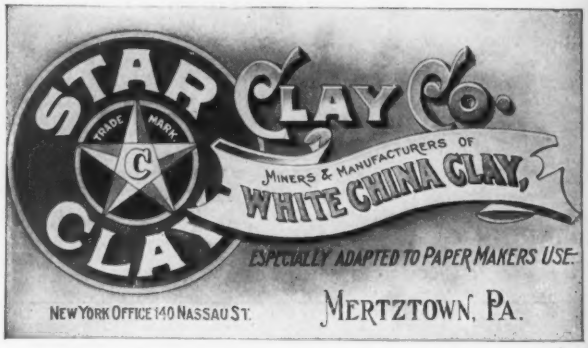

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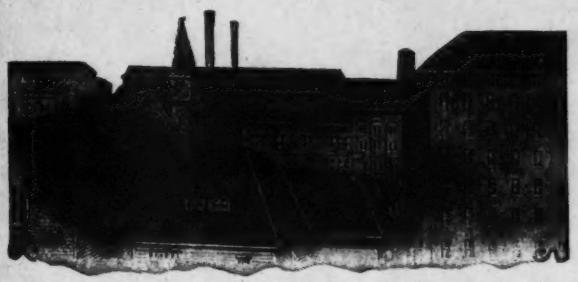

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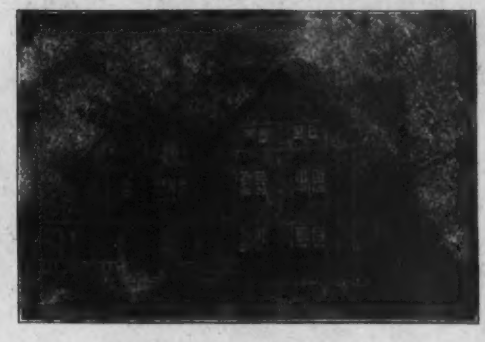

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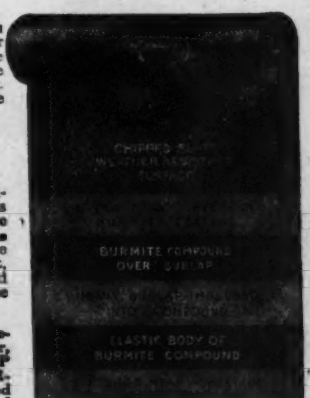

This Illustration shows component parts of "BURMITE" with Chipped-Slate Surface.

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Mr. Theo. Raun, Minneapolis, Minn. **Chicago, December 8th, 1910.**

Dear Sir:—In reply to your letter of the 5th, relative to the best material for you to use on your Bungalow, as a Roofing and Siding, we would like to call your attention to the Slate-Surfaced Ready-to-Lay "Burmite" Material which has recently been placed on the market by the Bermingham & Seaman Co., whose general offices are 1208-26 Tribune Bldg., Chicago.

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